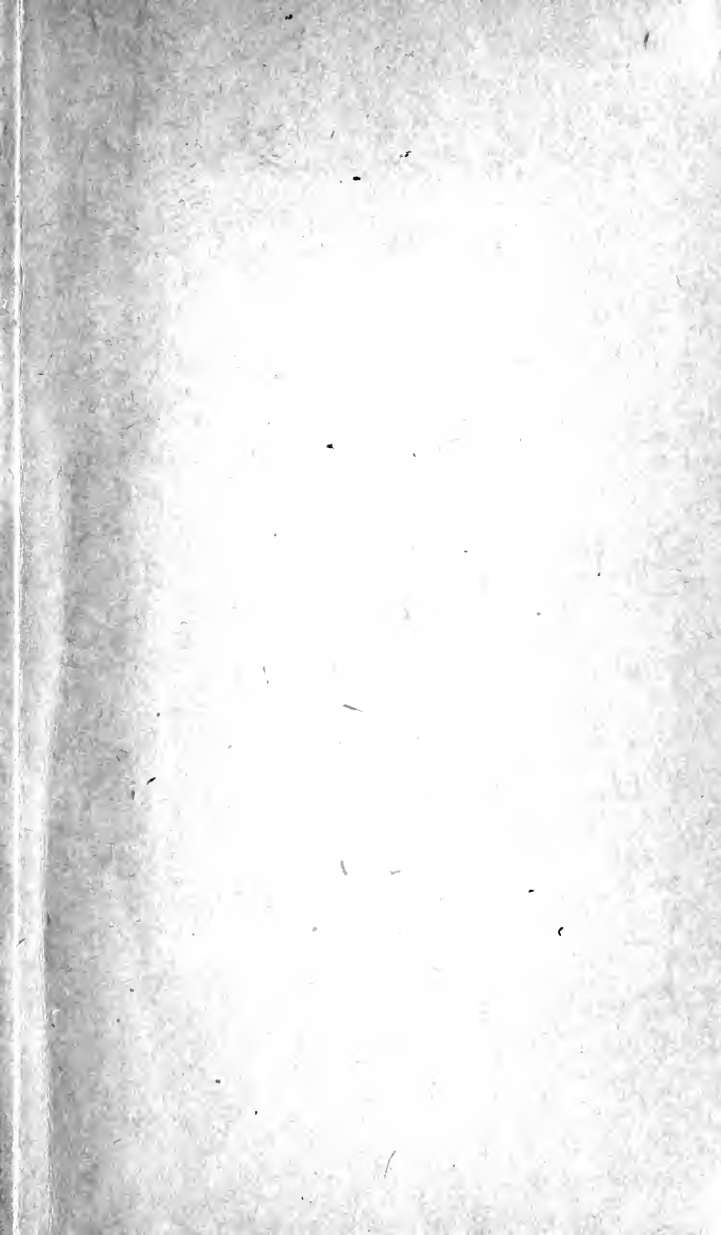
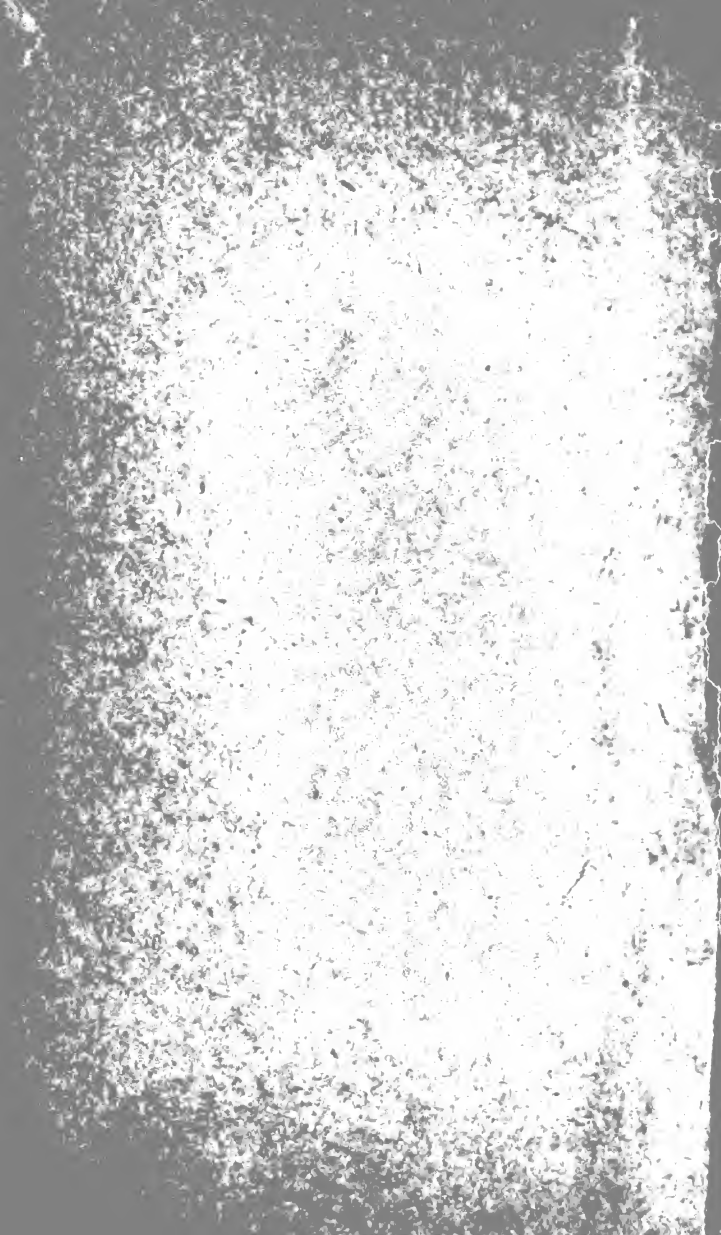


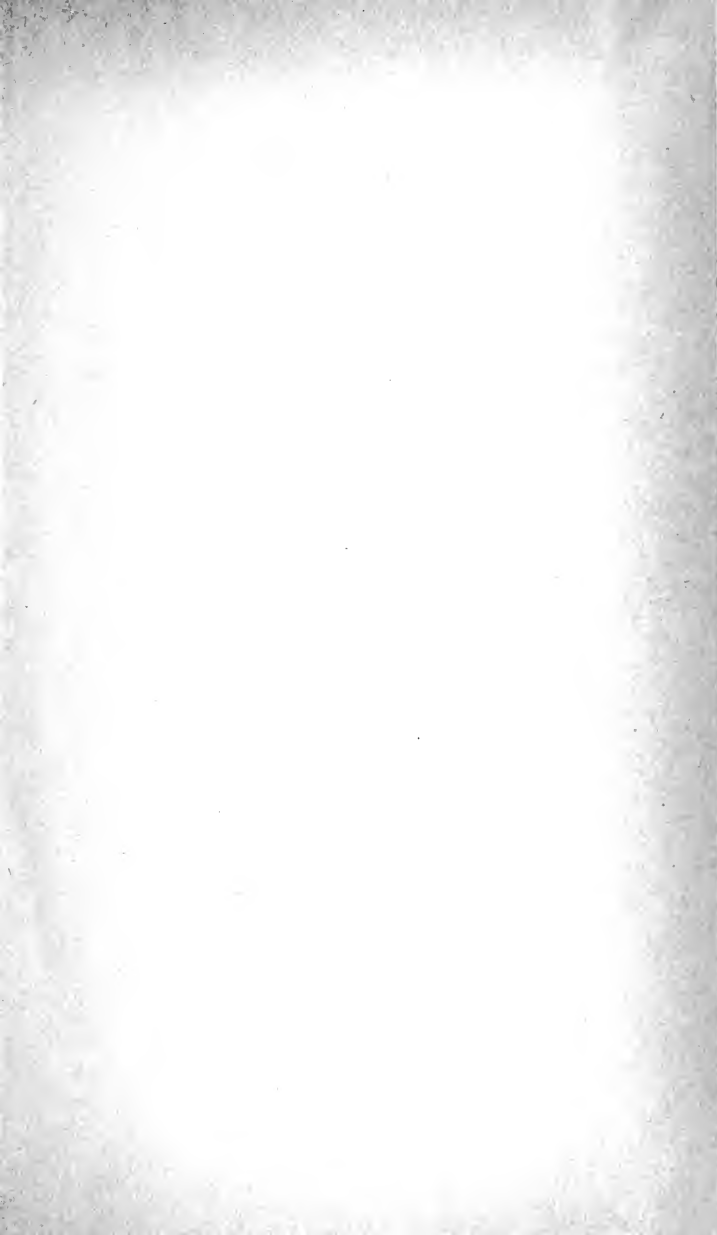


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THE INFLUENCE OF JOY

MIND AND HEALTH SERIES

Edited by H. Addington Bruce, A.M.

THE INFLUENCE OF JOY

BY

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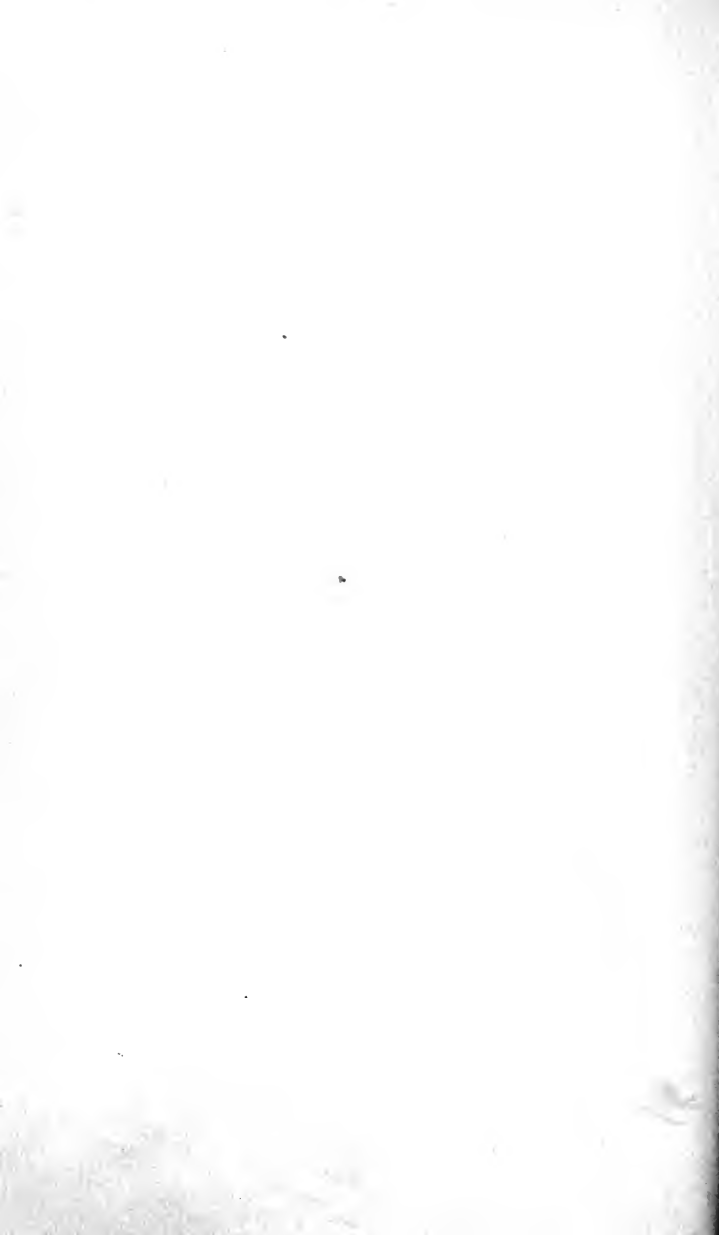
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THIS LITTLE BOOK
WITH WHATEVER IT MAY MEAN
IS DEDICATED TO MY WIFE
DOMINI

357336



EDITORIAL INTRODUCTION

IN a general way it has long been recognized that joy has a stimulating, tonic effect on the human organism. The so-called "New Thought Movement", of which so much has been heard, has as its basic principle this revivifying power of joy, in contrast to the paralyzing power of such emotional states as fear, envy, worry, and anxiety. "New Thought" literature, to-day so abundant, rightly emphasizes the importance of joy as an aid in healthy and efficient living, and reinforces its insistence on this fundamental truth by the citing of numerous evidential instances from everyday observation. In the main, however, the literature of "New Thought" has generalized rather than specified with regard to the influence

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of joy. It has done this, not from choice, but from necessity.

For it is only of recent years that science has made any exhaustive use of its marvelous methods of research to ascertain the specific effects of joy and other emotions on bodily states. The great impetus to systematic investigation in this important field came from the experimental work of the late Professor Pavlov, appointed in 1891 chief of the then newly organized Institute for Experimental Medicine in Petrograd. In this institute Professor Pavlov fitted up a laboratory specially equipped for investigation of the processes of digestion, which, by ingenious devices, he was able to study, in the case both of animals and of human beings, more thoroughly than they had ever been studied before. A direct result of his studies, continued through a long term of years, was an increasingly precise demonstration of the manner in which the digestive mechanism

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is affected for good and for evil by emotional conditions.

Further than this, the publication of Pavlov's observations had the consequence of intensifying scientific interest in the general subject of the physiological effects of the emotions. In various countries, — and not least in the United States, — able scientists followed Pavlov's example. Some studied, as he was studying, emotional effects on the functioning of the digestive organs, confirming and extending his findings. Others investigated the influence of the emotions on the heart, arteries, lungs, kidneys, liver, etc. This work of research still is in progress, and will long be in progress, owing to the vastness and complexity of its subject-matter. But already many discoveries have been made, of far-reaching importance as regards the conservation and restoration of health.

With scarcely an exception, unfortunately, these scientific investigators of the

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emotions have reported the results of their labors in writings — magazine articles, pamphlets, books — of too technical a character to be serviceable to the general public. Often, too, their reports have appeared in periodicals not accessible to the majority even of medical men, a class particularly interested in the work done in this field. There is accordingly a real need for a convenient, compact, and authoritative survey, and this need the present volume aims to meet, constituting a handbook that will be of practical value to any man sincerely desirous of enlarging his knowledge of fundamental principles in the art of living.

The author of this book, Professor George Van N. Dearborn, has the double advantage of being both a psychologist and a physiologist. He has himself made a special study of the physiology of the emotions, his interest in which dates from the nineties, when, as a graduate student at Harvard and Columbia Universities, he

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prepared as his thesis for the Ph.D. degree an essay on this same subject of joy. He has in particular studied the influence of joy on arterial pressure, and on "kinesthesia", — the "feeling of movement", — the importance of which from an educational point of view is only now beginning to be appreciated. Also he has specially studied the relation between joy and creative efficiency, as the reader will find. But in this book Professor Dearborn is careful to subordinate his own special researches and contributions in the interest of a well-proportioned, comprehensive survey of the work done by all who have shared in the task of scientifically studying the effects of emotional states on the organs and processes of the body.

The result is a volume which should exercise a marked influence for good. It gives precisely the information essential to adequate appreciation of what active acceptance of the "gospel of joy" will

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mean in the way of increasing personal health and power. No man who would achieve, no man who would live long, happily, and prosperously, can afford to disregard or remain in ignorance of the facts here set forth. And for this reason, for the sake of contributing directly to the promoting of human welfare, it is to be hoped that Professor Dearborn's soundly scientific book will have a wide and careful reading.

H. ADDINGTON BRUCE.

PREFACE

ONE of the many unhappy circumstances of this life of ours (which, after all, numerous really intelligent people rather dislike to leave) is the fashion prevalent in superior circles of deeming conscious and obvious happiness undignified. This harsh but permeating spirit of the old Bay Colony is not yet wholly dead among us, although echo of a day when to kiss one's wife or to smile on the Sabbath was a fault. At its very best it is all, of course, a part of the sadly mistaken notion of Brother Giles, for example, that the body, that miracle!, is "a devil's knight fighting against salvation", a prejudice which for fifteen centuries has kept the fair appreciation of the body and its victories far below its just valuation in the

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world's common mind. Joy, on the contrary, is the empirical index of the normal activity of unified mind and body, — the life man was meant to live, rational and unafraid.

And it is not the sincere and frank philosopher, truly learned in things as they really are, and wise, who belittles the adult's gladness of life, but the pretender, the pedant, whom, however, there are few to contradict. To him childhood with its pristine gladness, like womanhood, is at least a bit inferior, and childhood's joy a thing which man and woman should once for all put by. But the garrulous pessimist is almost always a weakling, a dyspeptic, or a melancholiac; and the vain gentleman too dignified to smile frankly, sometimes even when alone, makes others laugh aloud at his egotism. God is no dispiriter of man; and Nature, even at her utmost horrors, wears always a compensating sympathy to him who sees beneath her moods into the

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glad reality of our common but always transcendent life.

The present volume is an essay intended to set forth some of the hygienic and therapeutic sanctions of organic happiness. Some of its readers will find that it substantiates their belief, already firm, in the reality of joy's bodily influence; and a few of them may be originally convinced of it, those especially to whom "cold facts" appeal; while still fewer may see in the endeavor a slight but sincere contribution to the science of the relationship of mind and body, the two glistening sides of our soul's shield.

CAMBRIDGE, MASSACHUSETTS,
February, 1916.



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PART ONE
THE POWER OF JOY



THE INFLUENCE OF JOY

CHAPTER I

An Outline Survey

THREE conceptions and their relationships form the subject of the present volume, namely, mind and health and joy. These we need not attempt to define, not only because they are each inherently indefinable save in their own terms, but also for the reason that every possible reader knows in advance more or less exactly what they mean. It will, however, be the privilege of the book to try to make as explicit as already it is implicit the definition and nature of joy and happiness, for to do so is to understand and accept as real the "influence"

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which will be set forth, however fragmentary the result compared with the marvelous entirety of the reality.

The conception "mind" is quite beyond definition in any way acceptable to every one, but to include in its meaning that relatively (or absolutely) permanent aspect of the actual individual which represents the latter's always unique reaction to his environment, is to be at least not wholly wrong. Whatever else one adds to this idea of mind the writer believes is a matter largely of temperament or of the education one has happened to have. Perhaps "the soul is coming back", but it is wiser to see her always standing there, behind the scenes at times, but always dominant in the philosophy of man, whatever some of those men may actually say!

In this little book our first search properly is for an understanding of emotion; and then of gladness, joy, and its chronic state, "passion" in technical term, which

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we name happiness. If we outline our idea of emotion, perhaps the aftercoming technicalities will be the better put in place and integrated into a rounded conception.

In this brief discussion, the term "emotion" will be used as a generic word with much the same implication as feeling when employed as an abstract noun. On the other hand, "an emotion" is a time period of psychophysical experience with very well-defined affective reactions; in the same sense "a feeling" is a mild emotion, less determinate, and with much less obvious bodily activity concerned. There are fifty or sixty feelings readily called to mind, but the emotions proper are less than a dozen in the classification of James (which self-analysis shows to be correct). None the less in common usage feeling and emotion are essentially synonyms.

Let us first attempt to obtain a general, even if vague, outline sketch of what feeling, in its scientific meaning, is like. Every

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one knows the mental phase of the various feelings, and even if he did not, no one could describe them to him. Careful analysis, however, does make this "immediate experience" of feeling richer with meaning, although of course the more important part of the psychology of the emotions ("affective psychology") describes the bodily aspect of this two-phased portion or aspect of our life.

The term "feeling" is for psychology a most unfortunate one, because it means so many different things that scientific precision of expression is impossible unless one deliberately sets out to state the arbitrary meanings he will give the word; indeed confusion and doubts and misunderstanding follow in the truly scholastic way. One may feel with his finger tips, may feel excited, or sleepy, or ill, or cold; or, on the other hand, he may feel sorrowful, or frightened, or happy, or angry. The first five meanings of the term cited

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are but examples of very many complex sensational experiences to which the term is applied; the latter, feeling happy, or sorrowful, or angry, or frightened, are usages of the word which are the most exact scientifically, and these mental conditions are indeed emotions when of the requisite intensity and purity. Admiration, or piety, or disgust are feelings in the proper sense which rarely pass over into emotions. Thus much in the way of terminology, by means of examples.

We seek now to review the chief characteristics of emotion proper, feelings being for our purpose but mild and relatively simple forms of emotion; to describe the latter, or to analyze it, is therefore to represent the former as well. The emotions are feelings which are intense, temporary, and characterized, each, by a set of obvious bodily reactions.

Every emotion involves a subject, the person in whom it takes place and by

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whom it is immediately experienced ; and an object, that thing (objective or subjective, "real" or ideal) which is the occasion of the emotion at the time. Every emotion has a mental aspect, which is the complex consciousness during the emotion ; and a bodily aspect, consisting of widespread and probably universal bodily movements and tendencies to movement. Every emotion has a sense of excitement (due to the liveliness of the other elements) ; and, finally, there is always in an emotion, although sometimes more or less completely masked from consciousness, a tone either pleasant or unpleasant.

Let us now briefly discuss such of these emotional components as are most important practically, namely, the mental experience, the bodily movements, and the affective tone.

The psychical side or aspect of an emotion is of course what one feels while experiencing the emotion ; to describe it is

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as impossible as it is unnecessary, for every reader knows the experience as well as any one. The differences between an emotion of fear and the consciousness and sub-consciousness in an emotion of anger or of surprise are perfectly well marked in every memory — one is never in doubt whether he is afraid or sorrowful. To account for these differences is, however, a different matter, and to do so one must refer to the next element requiring explanation, namely, the bodily aspect of emotion.

This is what used to be called the expression of the emotion, a term no longer exact, according to the physiological theory of emotion, because this bodily phase is itself an essential part of the process; one does not think nowadays of a feeling or emotion as merely mental experience; this is now known to be only half, one way of looking at it, one of two aspects, where a dual mechanism is involved. It is very unsatisfactory to attempt to describe in a

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little space what the bodily side of even a single emotion is like, and to convey a notion of emotional "expression" in general is out of the question, each emotion being an hereditary physiological law unto itself. But, roughly, the physical side of emotion consists of movements and of tendencies to movement ("strains") in many different parts of the body, and most probably in its every nook and corner. There are contractions of muscles more or less complete and more or less universal over and throughout the body — of the muscular fibers in the walls of the almost omnipresent arteries and everywhere in the numerous glands, as well as of the voluntary muscles of the face and limbs. There is increase or decrease in glandular activity all through the body. Since we have learned, recently, of the close mutual dependence between the autonomic nerves and some of the glandular secretions, especially adrenin (epinephrin), iodothyrim,

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and pituitrin, this last set of bodily reactions has taken on a new interest. And Cannon's demonstration,¹ that in the strenuous emotions the blood's sugar-fuel is increased, adds another link, a dynamic one, to the scientific emotional chain.

No summary of the nature and phenomena of emotion could possibly be adequate to-day without some statements at least regarding these two chief factors, the muscular and the glandular, of periods of true feeling—as indeed the James-Lange-Sergi theory of emotion plainly suggests. The recent work of the physiologists and of the neurologists certainly tends to support this theory, however little these new workers in gland and muscle and nerve appreciate the fact. Let us glance, then, though as briefly as is allowable, at these two chief contributions of the bodily phase

¹ W. B. Cannon, "Bodily Changes in Pain, Hunger, Fear, and Rage", New York and London, 1915, pp. 32 ff. (Researches both interesting and important.)

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of emotion, namely, at the nerve influence from the glands and at that from the muscles.

In a book intended for popular use, it is not expedient to deal with the complexities of the visceral and circulatory influences in emotion save in the way of assuring the reader of their supremacy shared with the movement-impulses from the nerves of the muscles proper. This brevity is regrettable in a degree, and especially because just at present the occasional reader who would know more about these very interesting things is compelled to search out many scattered articles and monographs to find that which he seeks.

Gland tissue and that kind of muscle tissue which serves the vegetative or supporting business of the body (technically termed "smooth" or vegetative muscle) are everywhere, or pretty nearly so, throughout the organism inside and out. Both gland tissue and this form of muscle

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are abundant, for example, in the skin, in the digestive apparatus, in "the circulation", in the breathing mechanism, and in the apparatus intended for reproducing life.

The part of the nervous system whose duty it is to correlate all of these living instruments (glands and muscle) with each other, with the remainder of the body, and with its external surroundings, we would expect to be complex. Such indeed is the case, and only now, within the last few years, have we begun to understand in any adequate degree the structure and mode of action of this part of the nervous system, which is technically termed nowadays the autonomic system, after Langley's suggestion.¹ This mistress of the vegetative life consists of numerous elaborate knots of nerve units called ganglia and of millions of nerve paths connecting them every-

¹ J. N. Langley, "Schaefer's Text Book of Physiology", vol. II, 1900, etc. And "*Zentralblatt für Physiologie*", 27, 149; 1913.

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where, directly or otherwise, with every part of the body. Their connection with the spinal cord, that great, complex, assembling plant or switchboard and conducting cable both at once, is especially complete. By this means, on one hand, the brain is put into intimate relation with the invigorating and supporting aspects of the body, and on the other, the individual man or woman is *given control over his organism to a very considerable extent*, indeed to an extent by no means realized as yet either by science or, with a few exceptions, by the individual. It is through this intimate, reciprocal dependence and control that the brain cortex (representative of the humanity and culture of the individual) and the vegetative nervous system ("autonomic") respectively stand for restraint and for actuation, the latter urging by its "instinctive" mode of action the emotional life which it is the privilege of the former, the brain cortex,

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either to hinder, if it be harmful, or to further, if it be of use.

L. F. Barker, in August, 1913, stated¹ in the three following sentences the attitude of the most advanced physiologists concerning the affective relations of the autonomic:

“In how far those sudden and violent excitations of the autonomic nervous system which accompany strong emotions are due to the innervation of the glands of internal secretion, and in how far they depend on direct neural conduction from the brain, we are as yet but ill-informed. I need only remind you of the vasodilatation of the face in the blush of shame, of the stimulation of the lachrymal glands which yields the tears of sorrow, of the palpitation of the heart in joy, of the stimulation of the sudoriparous glands

¹ L. F. Barker, “The Clinical Significance of the Autonomic Nerves Supplying the Viscera, and Their Relations to the Glands of the Internal Secretions,” *Canadian Medical Association Journal*, August, 1913.

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which precedes the sweat of anxiety, of the stimulation of the vasoconstrictors, the pupil dilators, and the pilomotors in the pallor, mydriasis, and goose skin of fright, to illustrate some of these violent autonomic excitations. While we do not yet understand the exact mechanisms of association among the activities of the cerebrum, the endocrine glands, and the reciprocally antagonistic autonomic domains and their end-organs, we can begin to see the paths which must be followed in order that more exact knowledge may be gained."

Since then, as we shall learn, these paths have been well trod, and many rich landscapes of psychologic insight are seen for the first time, landscapes, however, which are, in the absence of photographs, so to say, far too complex to be described at present.

There are two matters recently discovered in these physiological and neurological

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travels that must at least be mentioned. One of these is the demonstration that secretions play an almost surprising part both in the action of the vegetative nervous system (at least) and therefore in the innervation of the feelings. The other discovery in these internal jungles of life is the functional opposition that has been shown to obtain within the autonomic system itself. It is reasonable to expect that this contrariety has some kind of basic representation in the emotional aspect of behavior. If this be so, however, and it certainly is *a priori* likely, the mode of the relation is not yet even in sight on the psychological horizon.

The nerve-influences directly connected with the action and active restraint of the muscle tissue that is under the personal will's control are even shorter in their description.¹

¹ G. V. N. Dearborn, "A Contribution to the Physiology of Kinesthesia", *Journal für Psychologie und Neurologie*, XX, 1, u. 2; January, 1913. Illstd. S. 62-73.

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Just as, psychologically considered, vision is undoubtedly the "queen" of the senses, so physiologically the processes inherently relating to movement, posture, weight, spatiality, etc., are assuredly the most important. In the universal integration of sensations, vision in a way may even be considered the mental counterpart of the bodily kinesthesia, as a little thought readily shows. Only now are educators beginning to realize the indispensable usefulness always and everywhere of kinesthesia, the "feelings of movement." Kinesthesia, however, is about to come into its own as the primary and essential sense. Without it, co-ordinated and adapted bodily movement and strain, connected with every kind of mental process, is inconceivable, for the (psycho)motor centers in the brain have no known clairvoyant powers, and therefore their function of carefully co-ordinating the distant muscles, *e.g.* of foot or hand, is entirely dependent on their

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continual reception of detailed information as to the relative tonal and contractional status of all the active parts to one another. Simple as this idea is, its immense practical importance has as yet hardly begun to seep into the minds of educators.

If we thus or similarly understand the nature and use of the joint-muscle-tendon-skin-bone sense, we all shall be ready to admit that the parts of the body not innervated or (by our tentative hypothesis) mentalized, so to say, by the autonomic nervous system, are pretty thoroughly represented motorially by the other system, by this, in short, the king of the senses. Its precise relation to emotion will appear later when other preliminaries have been set forth. At present, let us be content to understand that the very material essence of the body-life is *motion* and that every organism has throughout it adequate mechanism by which each bit of every

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molar movement and every strain and stress and shear may be indicated to the controlling nerve centers. Thus all these adaptive reactions are made useful to the individual by their work of furnishing active means by which his inherent personality may be advanced by an ever better adaptation to an environment, material and spiritual, ever more complex and therefore always new. Emotion has a large part in this essential adaptation for evolution and personal development; indeed it seems sometimes in all of us and always in some of us to provide the dominant dynamic incentive of our lives.

Kinesthesia thus appears as the second of two factors making the mental basis of emotion, the other subconscious and more "theoretic", because, so far as actual experience goes, less obvious. The "muscle-joint" sensations immediately represent activity, bodily movement, and by their group-uniqueness in each feeling and emo-

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tion provide the variety of affective experiences with which every one is familiar. On no other suggested basis is their respective uniqueness understandable.

As we have already seen in the brief account of the sense of movement, actual experimental evidence implies a duality of kinesthesia: an inhibitory and voluntary phase, and another phase, representative of impulsive bodily motions in both the vegetative and the voluntary organisms. In this duality of impulse and its control, the humanity of man seems to be represented as well as several significant lesser matters of scientific interest—not new, but forgotten. Kinesthesia may be considered the dynamic index of organism always in motion in relation to mind, and in emotion this principle is more obvious than elsewhere.

Whatever be the technical interests and difficulties in our present relative ignorance of the nervous system, the practical thera-

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peutic concerns are based, as we shall see better anon, in the dominating influence of natural activities over, on one hand, the emotional tone, and, on the other, the roads to a common goal of life sufficiently long. The dynamic index of these is the body's basis of sensation, subconscious and conscious, and we may best, as heretofore, term it kinesthesia. Its more immediate relations to emotions pleasant and unpleasant later chapters will endeavor to suggest, but the temperament of the reader alone will determine if the attempt to reconcile a search for mechanistic explanations with a deep-lying belief in an Animism which, like Acadian affection, "hopes and endures and is patient," succeeds or fails. By all means let us welcome the soul "returning" as Muensterberg says, into philosophy, but let us meanwhile try to understand how the soul is related to the rest of our experience, scientific as well as personal.

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Autonomic and cerebrospinal influences both, then, are concerned in the bodily phase of emotion. What this statement means in the complexity of bodily effects produced, one familiar with anatomy and physiology can readily understand. The total effect is perhaps nothing short of change in every organ and in every part of almost every tissue of the body, through the complete unification made possible by the nervous system. The indefinite number of combinations possible between these physiological elements explains the enormous complexity of the emotional expressions and their immense variety, both in kind and in degree or intensity. These bodily changes constitute the physical "basis", so called, of emotional phenomena.

The sense of pleasantness or of unpleasantness, the affective tone of an emotion, needs a word or two of discussion, because practically it may be the dominating element of feeling, just as theoretically it may

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be wanting in consciousness because for some reason masked or balanced in certain well-defined affective experiences. Into the psychology of pleasure and pain, of pleasantness and of unpleasantness especially, we will not here go; and there is no need of doing so, the important fact being that usually an emotion or a feeling is either distinctly agreeable or disagreeable, and at times almost painful or pleasurable, although rarely the affective tone cannot be distinguished, because there is none. Who, for example, will say whether an average emotion of surprise or of anger is pleasant or unpleasant? In the emotion of delight, on the other hand, or of fear, the affective tone is very prominent, in the former instance very pleasant in its character, and in the latter of a nature to be easily confused with pain.

Such being a rather technical idea of emotion, let us glance again briefly at some of its more general properties. In the

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first place, feeling (and here emotion is included) is that sort of consciousness, that aspect of the mental process, which is closest to the soul or ego of the individual. It is, one might claim, the most personal mode of consciousness, that in which the subject takes most interest. To account for this, consider its inclusion, usually, of an affective tone, of a sense or experience akin to pleasure or to pain. Of all biological principles, scarcely any is more universal than that every animal, be it worm or man, seeks satisfactions and avoids dissatisfactions, seeks pleasantness and shuns unpleasantness, strives after pleasure and evades pain in all its normal inclinations. When it does not do so, the presumption is warranted that the animal, almost always man, has gotten beyond the biological into the range of satisfactions with which we here have no concern. It is, then, because affective states more than other sorts of consciousness have this tone of

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pleasantness, or of unpleasantness usually, that these feelings and emotions control the conduct of the individual more than do other sorts of experience. One vividly remembers the emotion that gnawed his soul, and it seems a criterion, the occasion, or else the deterrent, of future action. Again, the emotions, theoretically as well as introspectively, are largely interwoven with the instincts, many emotions being, one might usefully say, minor instincts, more temporary as a rule, but otherwise of the same general nature, although, of course, different in particulars.

One can speak of the feelings and emotions, in an important sense, as the reactions of the individual personality at the same time to its environment and to the cenesthetic fabric of sensations, unique for each feeling and emotion and so characteristic for each, both in experience within and in manifest bodily movement.

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Feeling then is the aspect of mind (willing and thinking being the other two aspects) that is closest to the very soul, so to say, of the individual. The reason for this lies, it is clear, in the nature of pleasantness and of unpleasantness, the "affective tone", characteristic of all feeling. Here (be it repeated for emphasis) is the fundamental fact of life; every sentient being seems to seek inevitably his possible maximum of satisfaction. It often is not pleasure, and sometimes is not pleasantness, but it always is, apparently, the logical limit of this kind of experience, a limit always to be expressed as satisfaction. In emotion and affective experience generally, this phase of experience is most obvious and most characteristic. The therapeutic and physiologic value of this general state of mind, this inevitable and universal desiring, in the long run are quite beyond easy appreciation. But the reason lies in the universal stimulation, perhaps,

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which feeling of the pleasant sort produces in the organism as an uniquely delicate and sensitive "machine."

As we have noted above, a chief characteristic of emotional events is the universality of their physical influence, that is in the body. Whether consciously or not, an emotion unrestrained concerns more or less every part of the frame, thus getting the richness which is characteristic of the typical emotions. The supposition explains, too, the uniquely complex "expressions of emotion", their great variety, and consequently their interest for the observer. Thus the emotions, by means of their bodily side (as in all other phases of mind), become modes of social communication of great importance, second in value only to written or vocal speech. Much care and pains are devoted to teaching the child the various proper usages of speech, while the "language of the emotions" is relegated to poetry and to senti-

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mental relations. It is our intention only to suggest what a large, practical, even monetary, worth an acquaintance with emotional expression may sometimes have, thereby speaking a word for the worth of knowledge other than that of facts and abstract theories.

It has been already suggested that the two aspects of emotion, the mental and the bodily, are parallel to each other, more or less, and wholly and mutually dependent. The details of this correspondence (really, we may presume, an *interrelation*) are as yet vague, but the general fact seems clear and certain enough. As a consequence of this relation, one sees that bodily "expression" accompanies the mental experience; one feels an emotion, and simultaneously his body takes the attitude, or does the things, or exhibits the expression peculiar to that degree of that particular sort of emotion. For example, seeing a mad dog rushing about a street, one feels

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frightened, looks frightened, and runs away. On the other hand, if one artificially imitate the "expression" of an emotion (provided it be done with the requisite accuracy and vigor sufficient to raise the needful excitement in the mind), the corresponding feelings are experienced also. (James.) Thus most actors who produce truly exact imitations of nature, that is, the really great performers, thoroughly feel, almost always, the emotions they pretend to feel on the stage. Imagine Mrs. Fiske or Eleonora Duse playing one of their remarkable parts without feeling, to their soul's depths, what they make us feel. The pedagogical and therapeutic application of this principle (that, taking an attitude with the natural vigor and precision, the mental side accompanies, and *vice versa*) is common knowledge, and in the schoolroom gets its recognition in the universal attention given erect positions, "shoulders back," "heads up," etc. This

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is not a matter only of proper physical development, for it directly influences beneficially the mental attitude of the pupil toward things in general, and toward himself as person and as agent in particular.

Gladness is expansive and extensor in its bodily expression, while sorrow and self-abasement are contracted and stooping. Joy, too, is active and progressive, strenuous (sthenic is the technical term), while grief and pain, its opposite, are quiet and obstructive of real living. Thus physical activity stimulates mental activity, more or less, when not overviolent, and develops latent mental vigor. It is important, then, to insist that the young student shall conform to the rules of bodily posture which experience has taught give the greatest physical and mental freedom. To hold one's head up, other things being equal, is, we may be sure, to hold one's moral and perhaps mental standard higher, too. This principle is basal in medicine.

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Turn this matter quite about, and one also sees relations of value everywhere. Just as mental attitude accompanies physical attitude when part of an emotion, so of course bodily expression, in the technical sense, is concomitant with the mental side of affective states. Good humor means physical vigor and liveliness and useful bodily functioning; therefore good humor has a very practical value. The best educators, like the best popular lecturers, appreciate this relation and put it continually into practice. The object of the lecturer in this is to give his auditors pleasure, for which they have paid him in advance. The object of the educator should be to interest his students and so inevitably to draw their attention and secure vigorous effort to learn. Whatever gives one pleasure (ethically, satisfaction) interests above all else. In a like, and more important, way, the object of the physician should be to take advantage

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of the invigorating influences of pleasant emotion in every possible instance and at every possible moment when it is not contraindicated.

Once more, An emotion is a system or set of reactions which tend to occur on the presentation to the individual of the proper stimuli under the necessary subjective conditions. In the young child and in the savage, as well as in the brute in his natural state, one sees these emotional reactions very generally carried out in their theoretical form. In civilized communities among adults, we observe, on the contrary, comparatively little of affective expressions; in some nationalities, however, more of it than in others. The tendencies which have been at work thus to modify and mollify the natural emotions of men are various. They, however, all tend to the same end, namely, toward repression or inhibition of the bodily side of the emotional dual process, and regularly,

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we may suppose, partly at the expense also of mental affective experience. This inhibition of natural tendencies or "expressions" for the benefit of other tendencies more generally useful, is part of civilization, a function of every phase of education. This is indeed perhaps the hardest problem and certainly the most important as one starts out to educate a child: so to interest him that he will gradually learn to control extraneous and especially affective influences, so that he can devote his attention and energies to useful systems. In a similar manner it is becoming recognized as a basal therapeutic necessity in medicine to teach one's patients the resistless force of harmful influences becoming habitual, and especially when (as is usual rather than unusual) an emotional tone is involved with its persuasive tang either pleasant or unpleasant.

The educational element of his obligation to society the physician is especially

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prone to forget or to ignore: he as yet knows no psychology, save in a few instances.¹ The very least the intelligent practitioner can do, however, on the sound principle of *noblesse oblige*, is to see to it that every patient who can benefit thereby receives from his entire environment the curative influence of a happy, or at least pleasant, emotional tone. Modern psychology and physiology are now engaged, in part, in making us really understand the scientific basis of this familiar old idea. It is an important phase of modern therapeutics, at whose foundations are the theory and facts of emotion on a strictly sound scientific basis.

However contrary and repugnant the fact may be to certain traditional prejudices at a time when intellectualism is still dominant, far more of us are more habitually ruled by our feelings than by

¹ G. V. N. Dearborn, "Psychology and the Medical School," *Science*, N. S. XIV, 343, pp. 129-136, July 26, 1901.

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our ideas. The wide prevalence of some evil things is hard to prove because so secret and ill-reputed as to be denied; the affective dominance of human (as of brute) behavior, it seems likely, is one of these things. But it seems probable too that it is the disrepute and not the dominance that is to be deplored and, some day, outgrown. At any rate, it is now more and more generally recognized by psychologists that that aspect of the mental stream that we term emotional or affective supplies the energy, the motivity if not the "motive"! of our more usual life-process. Of course in reality, the behavior is all one thing and its "aspects" have no modifying power either way or any way, "an emotion" being but a period of the continuous series affectively tinged, but determined otherwise. On this obvious account every factor of both the bodily and the mental conditions enters our special problem.

It is time now in our argument to begin

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to specialize on the joyful side of the affective balance, and to point out some of its many particular conditions in the unified human economy.

In order to accomplish this, we must consider whatever we can find that makes for a general increase of gladness, delight, or happiness in the individual, not of course particular objects or acts, but tendencies common to our human animal life. At least nine or ten such conditions, reasonably distinct (although always parts of a whole separated only by science), can be discerned and must be briefly noted if we are really to understand the influence of gladness over our days. To try to arrange these joy factors, technically called "euphoric," in the order of their relative importance would be pedantic, so complex and varied are they all; but if there be a real trend either way in this matter, perhaps the following arrangement represents it. As contrasted,

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then, with a period of the mental and bodily "stream" felt to be unpleasant, an agreeable period, a pleasant feeling or emotion, has, we may assume, 1, An increase in the kinesthesia from the expansive and extensor movements of the body; 2, Increased action of the cranial (and of the sacral) autonomic nerve centers; 3, A lowering of the inhibition exerted by the upper layers of the cerebral cortex; 4, General personal excitement; 5, An increase of circulating fat; 6, Vasodilation in sundry regions of the body; 7, An increase of sugar in the blood; 8, Increased secretion in sundry bodily regions; 9, Biologic naturalness of the functions of the skin; 10, A lessening of weariness.

It is not to be supposed that all of these have any degree of constancy in pleasant emotion, for, as we have seen, the feelings are many, and no two are alike! Some of these factors are prominent in some af-

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fective states and inconspicuous in others. At the same time it is doubtful if any one of them is in 'health wholly absent or actually negative in a plainly delightful experience. Here as elsewhere, then, we are trying to "strike the average", to derive a general idea of joy applicable to any of fifty unique feelings.

These ten factors at least are in every case complex technical processes or conditions for psychology and physiology to describe. Other factors of general pleasantness than these ten there are aplenty without a doubt; some of them have not been discerned as yet in the complexities of life, and some of them are temporary or local or unreliable as to their trend. But after all, these ten are ample for our present purpose of demonstrating the primal import of natural activities in the conduct of the happy life. That these processes as mentioned and suggested are on the average truly pleasantness-pro-

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ducing I think will scarcely be denied: it remains, then, to point out the scientific basis of the "moral", of its practical significance or interpretation in a workaday and play-a-day world. The *reason* why joy and its congeners exert a beneficial influence over life, *why life loveth a cheerful liver*, lies hid, for some readers at least, in the relations of these ten factors to the organic process, in short, in their dynamic basis. Let us try to understand clearly, then, what this is and what, for us now, it means. It would be well were it as easy to express as to appreciate it.

CHAPTER II

The Influence on Nutrition

IN its material aspect, the human individuality is primarily metabolic or chemical, and its metabolism or protoplasmic life underlies of necessity all other bodily processes. Our first search, therefore, in our present endeavor to illustrate the influence of happiness, organic and personal, on the human life, is to understand in what manner it affects nutrition. For our immediate purpose, this term nutrition shall include digestion, absorption, excretion, and "assimilation" (metabolism) and shall imply something of personal dietetics, appetite, weight variations, and so forth.

The gist of this understanding is part of the deep common wisdom of the world, as may be seen in the habit in practice all

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the way down from the Old Empire on the Nile to our banquet of yesternight, to have all things pleasant, attractive, and sedative when we eat *ideally*. This relationship is not of course epicureanism only, ignoring life's real values, but is rather a matter of practical workaday importance to long and happy life. Personal experience, fortified perhaps by ancestral counsel, has shown us all that at picnics, on holidays, and during vacations, in each of which, ordinarily, the joyous index is higher than usual, our appetite, like our digestion and bodily nutrition, is more than usually energetic. We all know, too, as first-hand knowledge, that if the care-free, holiday spirit last only two hours (during the meal and after), our nutrition profits, being performed without discomfort and with dispatch.

This well-known principle, for reasons just suggested, is in a way the very heart of this book's thesis. It means, as one

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may clearly see, that the state of "freedom from care," as Saleeby expresses it, contentment, organic happiness, somehow yields energy for the use of the body; while it implies at least that the opposite unhappy states such as worry, hurry, vexation, grief, envy, jealousy, even pure anger, lessen the power available for organic maintenance. The principle is, then, so fundamental that to understand it, so far as may be, is essential.

Although more or less confusing with the factors of organic happiness just noted (the personality, despite its dual aspects, is normally one perfect integration), there are certain processes, fundamental in our living, which represent more precisely just these dynamic nutritive conditions. For the sake of clearness, these must be made more explicit, even if the recency of our physiologic knowledge in some cases makes certainty impossible and detailed relationships at present unstatable.

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The first of these nutritional dynamic processes apparently depends on an already famous *internal secretion of the interior of a ductless gland, the adrenal*. This secretion is adrenin (called also epinephrin, adrenalin, and suprarenin); it is not to be confused with the product of the adrenal gland's cortex or rind, about which less is known but which appears to be of opposite action. It is to Biedl especially that we owe our original knowledge of adrenin, but Dreyer, Cannon and his colleagues (especially perhaps Hoskins and De la Paz), and Elliott have done much toward relating this information to the vital machinery.

The ground fact is that a slight increase of this powerful substance in the rapidly circulating blood constricts the arterioles, the smaller blood vessels, an effect of far-reaching importance; and, furthermore, it brings about, as has been noted already, a rise in the sugar-content of the tissues, especially muscle. This general vasocon-

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striction, as it is called, raises the blood pressure, and this in turn is undoubtedly an important factor in increasing the activity of the voluntary muscles generally over the body, thus adding to the "excitement" of the individual and making the muscle, about one half of the body's mass, fresher, more apt for exercise, less fatigued. The increase of sugar in the blood, again, result of the influence of some substance, probably adrenin, on the liver, storehouse of carbohydrate energizers, acts directly to feed additionally the muscle cells and to animate them to immediate and more strenuous action.

In a more general sense than this, *improved bodily nutrition* is a second dynamic factor of joyfulness. Gastronomic imagination and association of ideas; appetite; digestion; absorption; elimination of refuse; and probably, though unproven as yet, assimilation, — each and all are allowed to proceed in their "mechanical"

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vigor and speed and certainty by an absence of disturbing influences. "Fletcherism", so called, the emphasis on the need of really using the teeth and jaw muscles and saliva, furnishes an example of the increased nourishment, as measured by Chittenden, coming from leisure employed unhurriedly and unworriedly, in mastication.

This, too, is an element in the abolition of the feeling of fatigue.

A third invigorating process underlying agreeable emotion is *generalized bodily exercise*. The well-known Féré showed us fifteen years ago that of all stimulants to physical exertion none is more effective, as none is more natural, than physical exercise itself. In athletics this principle has long been in practice in the universal habit of "warming up." The influence here is apparently a specific one on the muscle tissue (and nerve tissue?) itself, and not simply the obvious raising of the heart

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rate, of the blood pressure, and of the spirits and courage of the individual. Much, indeed most, remains unknown in regard to the details of muscular contraction and relaxation, and true explanation of the stimulation of exercise itself on the action-system, lies hid in this uneloquent physiologic silence.

The fourth and last of the dynamic nutritional factors we are considering was the third in our list of contributions or conditions, namely, some degree or other of *abeyance in the restraint of instinctive, emotional, reflex, or habitual actions*, in short of the motor factors of what Thorndike terms "the original nature of man." Lessening of a restraint of course allows action. We may now turn to this important element of our argument, postponed from the time of its previous mention (page 21). No one of the other conditions has perhaps quite as much practical moment as has this one. Few things indeed in the search

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for happiness are of more account than *habitual rejuvenation* and "*holiday*" so produced, whether derived through knowledge and spur from without ("suggestion") or through intuition and knowledge and initiative within. And all of these are inherently joyous. Let us examine a little into their common biologic nature.

From the evolutionary standpoint (and no other satisfies one's reason) the human mind as implement of the inherent and perhaps "immanent" personality or soul, has gradually appeared, in a period variously guessed between say two hundred thousand years and five hundred thousand. It is not only because it is *our* mind, but because it is truly so, that we suppose the human mind to have in it factors both more complex and nearer to the divine than has the mind of any brute, that is, of any animal save man. The idea of personality, then, implies more than the more or less mechanistic individ-

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uality of the brute. That difference, that excess, is our humanity, our humanness. If we analyze it by the methods of modern psychology and anthropology, we find it mostly composed of language, therefore of reason, therefore of mental and moral progress, therefore of civilization, and therefore, finally, of personality and "character" with its mathematic "limit" in God Himself. There must be some distinct element, it would seem, which fundamentally marks off a difference so profound as this and so boundless in its possibilities from the apparent limitations of the brutes, the "speechless" animals. This something I believe to be control, restraint, "inhibition." Its difficulty and its consequent biologic unpleasantness, it may be, correspond to its overwhelming valuation in the scale of ultimate things.

Personality, however, with this inhibitory endowment as its characteristic sign, shares with our "poor" relations, the

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brutes (and the trees?), the obvious necessity of close and adaptable relationship with an environment which is material as well as spiritual. This materiality demands that part of the life-process shall be body, and body demands in its turn nourishment and replacement when, in the eternal flood and ebb of life, the individual Paracelsus shall have "attained." Such in trite, but briefest, contour is the simple enough yet tremendous philosophy of the personal and of the supporting and reproducing organism which combine to constitute the essential parts of human nature: adequate means of control over much which is strong and impulsive.

The mechanism of this essential strength and impulse of the actual individual man or woman we have termed the vegetative apparatus, that system of autonomic and spinal nerves and smooth muscle and glands already indicated in the first chapter. Broadly considered, its object is to

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provide the energy and the push for the entire organism, primarily, it may be, for its own common vital events, but, philosophically speaking, for something else also which fares both further and higher. This ulterior something is of course the voluntary life, human and personal rather than brutal and racial, particular rather than general, intensive and not extensive in its action, devoted to developing (although it be often unconsciously) an ultimate personality, and to meeting conditions which for that personality at least are generally new and therefore difficult. Personality involves of necessity, it seems to me, two such logically opposed but practically complementary phases; one is relatively new because human, but the other is as old as Life itself, richest and oldest category of the human mind, and the best known.

In the basal need of universality of these vegetative factors of the personality,

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there is implied either a common agreeableness of experience, a distinct, conscious satisfaction, or, at the very least, a sub-consciousness that in the long run must not be unpleasant. To me this activity-pleasantness relationship is part and parcel of the rationality of the Cosmos, a presumption of agreement so overwhelmingly universal in experience that its contrary cannot be believed. To me, at any rate, for one, a million years of life-evolution gradually developing an affective balance that should start with a tilt of pain or of unpleasantness yet persist and continually prosper and evolve, is quite unthinkable; one can imagine it or fancy it, but one cannot think it. Thus, in application to our need, the impulse to activity normally is always easy and, at least by contrast, pleasant; just as it is easy to be a not unfortunate brute animal, or to be a care-free child or, being adult, to make holiday.

But the very impulsiveness and ease of

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action of the autonomic and spinal vegetative machinery implies that something other must be at least less easy since actual human life is notoriously difficult at times to nearly all of us, and to some of us nearly always so. This that is less easy, it is obvious, is the control of the more easy — the voluntary and personal, in short, which has oh so gradually! already set itself as over-lord above the vegetative and impulsive. Here indeed come in the “associative memory” of the biologists, experience, intelligence, reason, the flower and fruit of age-long mental and moral evolution.

The essence, in a word, of the mode of action of this habitual power over the impulsively vegetative is *inhibition*. Its machinery, one would *a priori* expect, perhaps, would be closely related to (or even identical with, it may be?) those parts of the action-system which represent intelligence, civilization, culture, most

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closely, namely, the great cortex of the brain and the wondrous mechanism of the voluntary muscle. There is scarce a reasonable doubt that this deduction of common sense is wholly corroborated by the inductions of modern physiology. We may presume then that this essential restraining power is intimate on the one hand with the will, the personal, individual human will, and on the other with the brain-parts devoted to the human intelligence. The author has already set this matter forth in sundry places,¹ and even had he and others not done so, this small volume were no place for it. It must suffice here, with a little exception soon to appear, that it be granted that voluntary movement, through its occasioning kinesthesia, is generally inhibitory with its integrating mechanism, chiefly the cortex of the brain.

¹ G. V. N. Dearborn, *e.g.*, "Kinesthesia and the Intelligent Will," *American Journal of Psychology*, XXIV, 2, April, 1913, illstd., pp. 204-255.

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It has five billion nerve-units to do it with!

The general impression that the cortex of the brain represents in broad terms the restraining control of sundry impulses (automatisms, reflexes, habits, instincts, emotions, etc.) has in recent years been rapidly gaining ground, we might say not only trench after trench, but in actual territory miles at a time. One thinks of Ribot's revolutionary work on attention as describing an essentially inhibitory process, and of his predecessors and successors from Des Cartes in 1662 to the most recent researches of last year on the inhibitory internal secretions and on the inhibitory nerve fibers and nerve cells. On the present basis of inhibitory kinesthesia and of the resultants of cortex association (Sherington's "final common paths"), all these related matters are beginning to integrate, to fuse into real comprehension of the bodily basis of skill, efficiency, civilization,

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and culture, the human successors of bruteness and of impulsive savagery.

The important principle reduced to its commonest and lowest terms is that of our grandmothers in the home: "One thing at a time and that done well." We now know that our nervous systems, in so far as voluntary and conscious, act with skill precisely on that rule: we can voluntarily attend only to one movement, one bit of deliberate behavior, at a time. If it is to be consciously done well, it must be "one thing at a time"; and it must involve, moreover, the correlation of the forces of the entire cortex (more or less) so that their result involves all (more or less) of its stored experience, wisdom, skill, civilization, culture.

Now this singleness of mind and of action means several things essential to our argument, to which we will refer, however, only by mere mention. One thing implied is the general consciousness or at-

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tention of the *entire voluntary personality*. Otherwise, at least, the action is not a truly voluntary movement, but is in some degree already habituated, as indeed are nearly all our acts. This implies a second characteristic of voluntary action, namely, its *novelty*; a strictly voluntary movement, theoretically speaking, has never been made before or at least only a few times before, not often enough at any rate, by definition, to have become in any degree habitual. On account of this novelty of a "deliberate" action, thirdly, its performance is *difficult*. This is an universal experience and needs no illustration. Its physiologic explanation may perhaps be found in the common supposition that a wholly new movement involves the primary forcing of a new association through or "along" unaccustomed nerve paths by the hundred or, it may be, by the many thousand, at a time.

It needs no argumentation to have it

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plain that this difficulty, due to the novelty of the brain's activity, should be, lastly, *unpleasant*. Rationally thus unpleasant in itself, because of its conscious perplexity, it may be also unpleasant by mere contrast with the ease and smoothness of vegetative, reflex, and habituated movement.

But whatever, in strict physiologic science, be the cause of the disagreeableness of organic restraint of things that are habitual and therefore easy and hence pleasant, there can be no doubt in any one's mind that its unpleasantness, even if often little more than a sense of difficulty, is a real power continually acting and therefore of great total import in the groundwork of behavior as the long descent of man has made it. This is seen to be especially emphatic as a basis of behavior when one considers that by contrast with the habituated processes, vegetative, and therefore immediately satisfying, and often positively pleasant or pleasurable

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even to the acme of human experience, this whole class of actions of restraint would be deemed especially disagreeable, in general and in particular, in universal repute.

But after all, it is not the pure restraint process, unpleasant or even almost painful as it may be (has the gentle reader ever tried to allow a fly to gyrate undisturbed on the end of the reader's nose, or has he ever stepped without jumping on the point of a broken clam-shell hidden in the mud?), it is not this especially by itself which is the importantly unpleasant element in inhibition, but the complex of emotional factors which uses this as its physiologic basis. Indeed, this matter is so important in our explanation of the influence of joy, that we shall pay especial attention to it in the second part of the book, under the head of worry, for example (page 174).

To the thoughtful reader it has probably already occurred that in his experience self-control and in general this very re-

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strait of vegetative impulses is sometimes a delight, and even one of the most pleasant, it may chance, of his entire motivity. As a fact of pure experience, regardless of scientific value, I am willing to admit that this optimistic fact is, for some persons and some periods, sometimes real, but I must immediately insist, not on a *natural* basis as yet, but on an artificial one, not biologically or physiologically, but as a matter of religion, of ethics, of suggestion from without from an environment over-cultured, over-civilized, yes, even over-humanized, never by any means the environment of the average man or woman, but that of the over-evolved few, far from the scientific basis of our common humanity. Asceticism, on one hand, shows it, typifies it; asceticism certainly is good and the anchorite honest with himself — but *only* when the joys of our common life have withered into the ground or evaporated into the sky!

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But this matter surely leads us too far afield from our task, which is at once a scientific and a practical one, bending its back to the biological problem as it affects us all until in the slow but certain melioration of mankind our bodies and their heaven-sent impulses, our natural life, shall no longer need restraint. This era will surely come.

Now then, at length, the two weights of the affective balance are before us: one vegetative and active and impulsive, but the other personal and restrictive and deliberate; the former inherently always pleasant, the latter, in the long run, difficult and disagreeable. If I have not failed wholly to express my meaning, it is clear that a personality consists in part of two processes which might be characterized as a center of restraint with much to restrain or even as *a process of restraint*, provided the vegetative be fully implied in the voluntary, the impulsive in the deliberately

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inhibitory, for the personality certainly includes both. On the one side of the balance in the affective scale-pan lies the pleasant normal activity, so far as Life is concerned, *expression*; in the other pan, *repression*. Activity has as its symbol Joy! Youth! Rejuvenation! Repression suggests — Hope.

So much (and scientifically in far too concise a form) for the dynamism or energism or kineticism — for the “push” — of joy. If these facts be kept in mind, the applications to the theory and practice of well-living cannot be difficult for any reader who cares to make them.

To report anew the observations of Beaumont, Pavlov ¹ in Petrograd, Cannon ² in Boston, Carlson ³ in Chicago, Crile, and

¹ J. P. Pavlov, “The Work of the Digestive Glands”, Thompson, translator, London, 1902.

² W. B. Cannon, “The Mechanical Factors in Digestion”, London and New York, 1911. Also his “Bodily Changes” already referred to.

³ A. J. Carlson, “Contributions to the Physiology of the Stomach”, *American Journal of Physiology*, 1912-1915.

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of others before these, may seem perhaps superfluous to certain readers. But Cannon's earlier (1898) observations on the cat are at once so germane to our purpose and so "classic" withal, that we should not omit to repeat them:

"In my earliest observations on the stomach," says the able successor of Bowditch at Harvard, "I had difficulty, because in some animals peristalsis was perfectly evident, and in others there was no sign of activity. Several weeks passed before I discovered that this difference in response to presence of food in the stomach was associated with a difference in sex. The male cats were restive and excited on being fastened to the holder, and under these circumstances gastric peristalsis was absent; the female cats, especially if elderly, submitted with calmness to the restraint, and in them the peristaltic waves took their normal course. Once a female with kittens turned from her state of quiet con-

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tentment to one of apparently restless anxiety. The movements of the stomach immediately stopped, and only started again after the animal had been petted and had begun to purr. I later found that by covering the cat's mouth and nose with the fingers until a slight distress of breathing occurred, the stomach movements could be stopped at will. Thus, in the cat any sign of rage, or distress, or mere anxiety, was accompanied by a total cessation of the movements of the stomach. I have watched with the X rays the stomach of a male cat for more than an hour, during which time there was not the slightest beginning of peristaltic activity, and yet the only visible indication of excitement in the animal was a continued to-and-fro twitching of the tail. What is true of the cat has been proved true also of the rabbit, dog, and guinea pig. Even slight psychic disturbances were accompanied by stoppage of peristalsis. . . . Lommel found

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that small dogs in strange surroundings might have no movements of the stomach for two or three hours. And whenever the animals showed any indications of being uncomfortable or distressed, the movements were inhibited, and the discharge from the stomach checked. . . .

“Fubini observed that fear occasioned more rapid peristalsis [in the intestine]. . . . There is no doubt that many emotional states are a strong stimulus to peristalsis, but it is equally true that other emotional states inhibit peristalsis. In the cat the same conditions which stop the movements of the stomach stop also the movements of the intestines,” etc.

When it is realized by the reader that these cessations spoken of mean acute indigestion if long continued, with the pain, decomposition of food, intestinal irritation, toxemia, malaise, etc., so familiar to multitudes of folk, the basal importance of the facts as stated does not need addi-

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tional demonstration. We may be practically sure that in man, owing to his more sensitive and psychical nervous system, these effects and relations are even more conspicuous than in these brutes.

The important thing is to realize as certain that the general unpleasant attitude of mind, the *angor animi* of the writers of the Middle Ages, is incompatible with vigorous and complete digestion. A sense of feeling in a hurry is by itself ample occasion of an indigestion, this being physiologically a worry lest one be late. In like manner every vexatious and depressing state of mind, all being emotional states, be it observed, are apt to lessen or even stop the autonomic rhythm of the stomach and duodenum at least, and in every probability to lessen the amount of the digestive juices provided for the process. Hundreds of illustrations of this fact are in the books for any one to read; and the quick-lunch counters and the inferior board-

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ing houses and the commoner restaurants are rich fields for observation of its truth. It is necessary to understand then that this is a real bodily influence, and equally essential to appreciate its vast underlying importance in the lifelong welfare of millions of men and women. It is a trite subject, to be sure, but none the less essential because thus hard to drive into the effective control-mechanism of men's lives. Dyspepsia, which means difficulty in digestion, in the passing decades and centuries is more momentous than wars even, unthinkably awful as they are, and worse in its retardation of universal civilization and culture than all the oldtime plagues, taking millions as they did sometimes, with woe unspeakable, out of Europe's life. For here is something that goes on day in and day out for a score or two of years, in the large majority of every country's workers. It is such expenditures that are important, not the occasional

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extravagance, as every economist knows, as every medical man preaches in its application for example to the use of alcohol. As we appreciate better how literally one are mind and body, aspects of some *tertium quid* that science does not as yet describe, the better do we realize the therapeutic value of psychologic principles like this.

One hears of late no end of dietetic wisdom sounding in the air, but the matter of diet is of small moment in comparison to the simple command of Nature: "Eat in good humor not too much of ordinary food." Dieting often means little, but the digestive effect, easier to arrange, often means very much.

Sadler, in a recent popular-styled book¹ of much practical usefulness, has in these terms summarized the effects of "faith" on digestion:

¹ W. S. Sadler, "The Physiology of Faith and Fear", Chicago, 1913. The author of this book owes much to Professors W. S. Hall and R. H. Gault of Northwestern University.

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“The gastric secretion is produced in abundant flow by expectant hunger; the quality of digestion is increased [sic] and there is normally balanced juice; the digestive strength is excellent: ‘holiday digestion’ is always good; psychic dyspepsia is entirely cured; stomach movements are strong and regular as in normal digestion; digestion-time is shortened; nervous dyspepsia is relieved and removed; the vomiting center is quieted and controlled; intestinal secretion is increased in quantity, copious, and its quality is strong and active, and its flow regular; the intestinal movements are regular and normal; and constipation is decreased.”

These statements are probably well within the truth, although it is likely that Sadler would be somewhat hard pressed to give the exact authority by whom each of these results was actually observed.

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To any who has read to good advantage the opening chapter of the present volume, explanation of such statements and of such a command need be no more than a word: Good humor, joy, is the index of activity; the ingested food, putrefactive because moist and warm and bacteria-laden, is to be digested and used quickly, if at all; therefore, in our syllogism, "joy" is necessary for nutritive health, Q.E.D. Joy means kinetic energy, the great normal activity, both mechanic and chemical.

Life loveth a cheerful, not a melancholy, liver. "Melancholy" of course means "black bile" and comes from a time of myth and of ignorance even darker than our own concerning the real workings of our wondrous organisms. Bile to the people of that time was a harmful agent, while to us now it is a lack of bile which tends toward nervous dyspepsia and all its factors of unpleasantness. No man perhaps has understood these subtle in-

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fluences better than Henry Maudsley,¹ and he thus characterizes the two "temperamental" elements of the affective balance:

"However miserable, they [the joyous] have not the least inclination or desire to end their sufferings by death: so long as they breathe, it is a happiness to breathe. Little as they can conceive it, however, there are persons afflicted with a constitutional melancholy who have no sense of a positive enjoyment in living, who go through with life as with a task that is to them at best indifferent, at worst burdensome and painful, and who at certain times when more out of tune than usual, are oppressed with a desponding sense of the dreary emptiness of life, with a deep disgust with the meanness and the meaninglessness of its strifes, with a weary apathy from all its interests."

¹ Henry Maudsley, "Pathology of Mind." This work, with its complement, "Physiology of Mind", is still a classic description of "mental fundamentals."

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The great lyric of melancholia and despair, James Thomson's "City of Dreadful Night," expresses in quite other words this same temperamental contrast :

"Yes, here and there some weary wanderer
In that same city of tremendous night,
Will understand the speech and feel a stir
Of fellowship in all-disastrous fight.
'I suffer mute and lonely, yet another
Uplifts his voice to let me know a brother
Travels the same wild paths though out of sight.'

"Oh sad Fraternity, do I unfold
Your dolorous mysteries shrouded from of yore? ,
Nay, be assured ; no secret can be told
To any who divined it not before :
None uninitiate by many a presage
Will understand the language of the message
Although proclaimed aloud forevermore."

These quotations sound like the adolescent melancholy and pessimism common to nearly all widely read and intelligent young persons, but it is more than that and more lasting. Closely allied to "psych-

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asthenia", it represents in all probability a badly nourished and little exercised nervous system, especially the autonomic, as we shall see more fully later.

Guthrie Rankin has put much in small space in a little part of a recent article in the *British Medical Journal*:

"Poor innervation of the alimentary canal occurs in persons with hereditary nervous instability, and in those who have overtaxed their nervous capacities. All such cases are accompanied with the underlying symptoms typical of *neurasthenia*. The chief dyspeptic symptoms may be extremely *variable* according to the severity and duration of the disturbance. They may at first amount to little more than a *fear* of certain forms of food, associated with *distress* after eating. In the later stages acid *eructations*, severe *distress* two to four hours after meals, epigastric *burning* and *pain*, a *sense of great fullness*, etc., make their appearance. . . . The taking

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of food between meals at times relieves the *discomfort* for a short while. Physical examination in the early stages may show nothing referable to the digestive tract, but later there is often considerable *gastric dilation*, *tenderness* and *rigidity* in the right epigastric region, and often a *distended* and *filled colon*. [Atonic constipation thus suggested is in itself a source of great and lasting discomfort and injury, especially in women.] The general physical signs of *neurasthenia*, together with some loss of weight and some anemia, accompany the picture."

I have italicized the words which suggest the well-nigh universal discomfort or unpleasantness of this extremely common condition. Here certainly are the typical symptoms of chronic bodily discomfort. What heart has a man suffering from conditions like these for the free and joyous work and play activities of the busy, contented life — until indeed he escapes

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its vicious, circling round of malnutrition, pain, and weakness, and pain, malnutrition, and weakness, years on end, and for the "vicious circle" substitutes the benign circuit of complete and rapid digestion and enjoyment and strength both of muscle and of nerve, perhaps even till death them part?

Some readers at this point will have in mind the natural and familiar How? But the important question has been answered so very often of late that we do not venture to do so again. Indeed, too often is the self-protective and efficient initiative, based on plain common sense, of the average man or woman, ignored. It is the present supposition that science has done its duty when it has presented the living facts as a base on which each may work out his own salvation. If it were a medicinal specific which were in question, hard to obtain and difficult to administer, the matter would be a different one, but in this

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case the therapeutic process is scarcely less common or more specific than common sense normality of living itself. Normal mind is active and contented, if not happy, mind; and normal body, mind's homologue, is inevitably active and progressive.

Many have not stopped to think how intimately the enjoying mind and the feeding body, both in prehension and in minute cellular assimilation from the blood, are integrated and how helpful to each other (if for a moment we may be dualists). It is now well known that no sense-experience is too remote from the inner-ventions of digestion to be taken into its associations and serve as a stimulus of digestive movements and secretions; these facts are familiar as Pavlov's "conditioned reflexes",¹ but did multitudes of hurried

¹ J. P. Pavlov, "Die Psychische Erregung der Speicheldrüsen", *Ergebnisse der Physiologie*, 1904, I Abt., S. 182. See also J. B. Watson's interesting continuation of the matter to the muscular reflexes of man: "The Place of the Conditioned Reflex in Psychology," *Psychological Review*, XXIII, 2, March, 1916.

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and worried men and women, with "no time to eat" in mental peace, know these things effectively, in their subconscious minds which guide their actual behavior, life would be sweeter to them, and more useful.

When one is hungry especially, every mental process that in any degree touches or can associate with the innervation of digestion starts going the complex nutritional machinery. A thought of some past gastronomic satisfaction, the visual memory of a temptingly arrayed meat market or bakeshop window, is quite enough to make one's mouth water with saliva, first link in the digestive chain. Here comes in the influence and the physiology of the sometimes highly lauded pleasures of anticipation, often indeed greater than the anticipated reality, for, alone, the mind is free to enjoy, but the body has conditions which oftentimes conflict in the affective balance.

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But this anticipation, that of eating when one is hungry, prepares and starts the digestive mill, and meanwhile is delightful. Wholly in like manner, the actual sight of food, or its pleasant odor, actuates the nutritive process, and we may be reasonably confident that the more strictly physiologic as distinct from psychologic be the mode of stimulation, the farther does its influence immediately extend down the alimentary canal. Cannon has pointed out how well connected are the processes in the different successive gastro-intestinal portions of the tube, although previous work, that by Meltzer, for example, had described the preliminary complex interdependent function of swallowing. Actual contact with the mouth's mucous membrane seems to be necessary for the starting of the gastric hopper's movements, while the proper grinding begins by influence from the hopper; the pyloric valve (between the stomach and

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the intestine) is opened by acid material below it, thinks Cannon at least; the common bile duct and the gall bladder really appear to be actuated by food in the duodenum. The direct observations on the movements of the absorptive villi made by Hambleton¹ (foretold by the present writer in *The Psychological Review*, XXI, 3, in May, 1914, in an article entitled "Certain Further Factors in the Physiology of Euphoria"), led him to believe that motions of the contractile variety at least were under control of the peripheral nervous mechanism and so subject to numerous modes of control from places not yet defined. In short, it is likely that the whole nutritive mechanism is integrated normally to the utmost. So that it, like the other sets of machinery in this wondrous, self-repairing, chemical mill, is one with the mental process, especially in its subcon-

¹ B. F. Hambleton, "Movements of the Intestinal Villi", *American Journal of Physiology*, XXXIV, 4, July, 1914.

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scious phases, and each in a degree is at once subject to and master of the other, and all are working vigorously, when the conscious attention or the general disaffection does not prevent, for the common personal benefit.

We are probably only just at the beginning of the accumulation of information that will show every one ever more conclusively that mind and body are aspects, in practice "mutually dependent to any assignable degree" because in reality one thing. From this viewpoint, consciousness is the experience that we have of our reaction to environment, and when the reaction is favorably adapted, it is pleasant; but unpleasantness, whatever its source, disturbs the adaptation. Why indeed, as the astute Hack Tuke¹ inquires, following Shakespeare,

¹ D. Hack Tuke, "Illustrations of the Influence of the Mind upon the Body in Health and Disease", London, 1872, p. 272. This is one of the early treatises of the kind, and by a famous London physician. See also Robt. Burton's "The Anatomy of

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“Why should a man whose blood is warm within,
Sit like his grandsire cut in alabaster?
Sleep when he wakes? and creep into the jaundice
By being peevish?”

Melancholy”, London, 1652, an important but forbidding classic even to a student of Latin.

CHAPTER III

The Influence on the Circulation

THE blood is the chief means of material distribution and collection in the body, supplying oxygen and food and drink to its many billions of cells and taking away the various waste from each of them. Nothing can enter a tissue cell save from the circulation, which is therefore seen to be the immediate arbiter of good and evil, yes of life and death, to each of the vast multitude of citizen-cells in this teeming and busy body-republic.

In modern physiology as in ancient law, the circulation is the criterion of life as it is the proof of death. When a man's heart stops beating, then only is he legally dead, and for physiology the protoplasm of the tissues ordinarily dies with the lym-

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phatic flow around it. Thus, if a heart be made to stop short suddenly, the animal drops dead, because the cessation of nourishment in certain neurons (nerve cells) of the cerebellum and the corpus striatum in the brain, and perhaps of others in the spinal cord, has instantly lowered to zero the tonus of the trunk-supporting muscles. From this lower logical limit up through every grade of anemic influence to congestion and even to apoplexy, the bursting of a cerebral artery, the circulation and the nervous system are in the most intimate possible sympathy, qualitative and quantitative. The same concert is true of the blood and the glands, and of the blood and the muscles; these, blood, neurones, glands, and muscle, constitute the action-system integrated with the mind and together so as to be one single mechanism. Nothing is easier to demonstrate, yet few things in psychology certainly are more frequently forgotten or ignored.

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Since Dunlap's little "Psychobiology"¹ appeared, the first book of its kind, there is no longer any great reason for the widespread neglect of this essential organic integration.

Its general outline, moreover, would seem to be part of the birthright of every boy and girl, this knowledge of the momentous mechanism of efficiency, for only so, appreciating its wonderfulness, will it be properly used and protected and reproduced. In no other single case than this, far and away the most important of all to every one of us, are people expected to safeguard properly complicated machinery that they do not at all comprehend. How can one wonder that under this common condition the mechanism gets over-heated in parts, rusty in some, bent in others,

¹ Knight Dunlap, "An Outline of Psychobiology", Baltimore, 1914. Invaluable to students of psychology, philosophy, physical education, and to educators of all kinds, including manual trainers. See also the present writer's "Movement, Cenes-thesia, and the Mind" in the *Psychological Review*, May, 1916.

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occasionally broken here and there, and altogether worn out and "scrapped" by the managing Director long before it has done its best work in a busy world? Certainly, an outline of psychophysiology, of the structure and action of the human mechanism of efficiency at least, is every child's plain birthright, and before long public educators will appreciate the obvious fact.

Not the least important part of this integrated apparatus by which we do things and become, technically speaking, personalities, is the heart, the compound duplex suction- and force-pump of the circulating blood and lymph. Not only physically thus, however, but psychologically, is the heart a paramount factor of our life, for the term stands for much more than a pump! Just this "more" is its essential emotional content and meaning with which we here are chiefly concerned. As we have seen already, by implication

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chiefly, the heart is ordinarily controlled by the autonomic balance, the famous tenth cranial nerve, the pneumogastric (see Eugene Field's famous poem) serving to regulate it and to increase its force, while the sympathetic proper "furnishes" its relatively irresponsible impulse to activity. But the pneumogastric "nerve" (in reality it is a whole complex system of pathways) receives influences from practically all over the body except directly the four limbs. Stimuli come to it from the brain centers of emotion (optic thalamus), of muscular tone (corpus striatum), and of intelligence and association (cortex cerebri), as well as from the entire abdomen and thorax and all their busy and sensitive viscera. Occasionally a road more open or more direct than usual between the voluntary cortex and this nerve gives the individual a dangerous deliberate control over the heart, so that it may be slowed at will or even stopped. This is a doubtfully useful

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faculty, comparable to that possessed by a student of the author's (Mr. S.), who can voluntarily, by force of will for ten seconds or so, erect the hairs on his forearm, producing to perfection the phenomena of "goose flesh", ordinarily purely an involuntary sympathetic function, the arrectores pilorum muscles being of the smooth variety.

We thus see that while, under ordinary functional (and structural?) conditions, the heart is an autonomic, vegetative organ, beautifully innervated from all sides so as to do well its supreme work, adapted to every breath of variation in the hydraulic and the nervous conditions, it yet has at its elbow, so to say, ready for instant development and use, direct connections, we might say (see page 55 above), with the personal will of the individual. This is an important circumstance for our purpose and without a doubt is typical of other easily developed voluntary powers

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perhaps throughout the entire vegetative organism. Herein is the physiologic ground of *hypochondria* and a tagging host of knavish followers down the hill to a false neurasthenia and on to a fancied and then sometimes a real invalidism. There seems no assignable limit to the development of deliberate control and interference with functions which are built to work automatically, and which, left alone to a wholly normal life, will do so with marvelous perfection, year in and out until the individual's end of time. The application of this foundation fact and principle to the influence of joy plainly is indirect (however germane to the theory and practice of neurasthenia and of hysteria), but because indirect no less essential. It means, for our immediate purpose, that the general affect, pleasant or unpleasant, and the particular emotions, are under voluntary control, or at least that they always may be, the normal or-

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ganism having ample means for making the normal human being "captain of his soul", creator of his destiny. *The body has the complete machinery for preserving the happiness of the individual.*

In practice, then, this becomes a matter of will-power and of training, which means energetic *habitation*. This factor of habit makes practically "all the difference in the world", for habit readily and continually usurps the throne of will and enslaves the king past all ennobling. Failure to adequately appreciate this fact is what makes Eddyism (properly Quimbyism) absurd, and the oriental doctrine of the will frequently unfruitful and misleading.

That the heart is very sensitive to affective influence the child begins to realize often in his fifth or sixth year, and the relation remains a dominant fact, in his subconsciousness at least, always after. The physiologic basis of this emotional sensitivity as well as the heart's sus-

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ceptibility to depressing idea-complexes (tinged with feeling, we may be sure) was exemplified in some simple but important experiments performed by Lyon and Qualls¹ on seventeen male medical students. The research was in two parts:

“Part A. The pulse rates of a group of thirteen students were counted. They were then given milk-sugar pills. They were told that they had taken a heart stimulant. To make the case more vivid, the possible action of such drugs was discussed during the time intervening between the first and the second counts. After forty to sixty minutes, the pulse rates were counted again.”

Part B. was similar in its procedure, save that seventeen students were studied, that they were told that they had taken a new synthetic cardiac depressant, and that

¹ E. P. Lyon and G. P. Qualls, “Experiments with Cactina and Cactin”, *Journal of the American Medical Association*, LV, 6, August 6, 1910, 455-459.

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the time between the pulse counts was "from twenty-five to forty minutes."

Of the thirteen hearts in A, nine beat faster, three more slowly, and one did not change its rate. Of the seventeen in part B, thirteen beat more slowly after taking the imaginary depressant, three beat faster, and one showed no change. The "average" increase (a specious thing, the average!) was four and two tenths beats per minute, nearly six per cent; the "average" decrease was four and four tenths beats per minute, a trifle over six per cent. When we come to discuss the theory of suggestion in the next chapter, we shall refer to these experiments again, and indeed they serve as a valid starting point for a number of different psychological investigations. Just here the results are interesting because they illustrate especially the principle, worth noting in our argument, that idea-complexes, formed and maintained without any emotion, readily

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influence, and either actuate or inhibit, the autonomic nervous system, and through these they influence the vegetative life, but *only to a minor extent as compared with conditions predominantly emotional*. Not a man among those seventeen but could at will readily have raised his heart rate by a "pretended" but real feeling of excitement of some kind from twenty to forty per cent. Increases of one hundred and eighty per cent are common enough in male athletic contests, and as every physician knows, the rates usually found in normal girls of six or eight in health are often thirty or more per cent higher than when no "doctor" or his influence is near; and the more or less concomitant breath rate is still more easily disturbed by affective energies.

Ideas and concept-complexes are represented in the body probably by the sensori-motor innervation (kinesthesia and cenesthesia) of the muscles and glands

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which could in some one of numerous ways express them; but affects, as we have seen, require the coöperation of much of the vegetative organism, and of the voluntary muscles as well. Emotional reactions are inherently dynamic, as well as kinetic, as we have seen, and furnish their energy to whichever autonomic resultant or "final common path" holds at the moment the middle of the behavior stage.

One does by no means consider doubtful the numerous accounts that are to be read and to be heard of the invigorating action, sometimes over even the most pathologic states, of encouragement activated by a vigorous will. Here is another instance out of the many which psychophysiology and medicine know of ancient beliefs proved true and explained by modern scientific research of the most rigid kind. The genius of the venerable Th. Ribot of the Université de Paris has given us in

his "Creative Imagination"¹ at least an outline of the method which, if followed in the ways of our modern laboratories of psychology and of physiology, may explain many things most scientific men to-day deem fanciful or mistaken or irrationally mysterious. Personally I am of the firm and deliberate opinion that, in the light of recent work on the one hand in neurochemical physiology and on the other hand in more or less speculative physics, no assignable limit can be set, even by hard science, to the influence of the "mind" over the "body" or of body over the mind. The category *Life* has values of its own which no man really wise can longer dare to ignore and hope to retain a reputation for mental breadth.

As an example at hand, and withal as good as another, take the following personal observation of W. S. Sadler, M.D., from whom I have already quoted: "We were

¹ Th. A. Ribot, "Essai sur l'imagination creatrice", Paris, 1900.

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summoned to the bedside of a patient whose heart-action was almost suspended as the result of a frightful hemorrhage. The pulse was not perceptible at the wrist, and the heart had all but given up the struggle [?]. While the attendants made ready to inject salt solution and administer restoratives, we spoke to the patient in very positive and assuring terms, in answer to her question as to whether or not she was dying, and immediately, — almost instantly, — before a single material thing had been done for her, she began to rally: the heart began to beat with increased vigor, in less than one minute the pulse could be distinctly felt at the wrist, and in but a few minutes she had almost completely rallied from a threatened collapse. This was very evidently a case of heart rally in response to certain stimuli and nervous energy, originated and directed by that potent and powerful mental force, *faith*." It is easy to imagine what might

have been the outcome had powerful suggestion of the opposite tenor been offered to such a patient.

As a physiologist, I see nothing in this effect hard to understand to-day; as a psychologist, I find in such a case a deal of new meaning of future use to the world when we have learned to make it practical for general application.

Joy, however, especially if it be sudden, that is, unexpected, frequently so influences the heart as to overthrow its nervous and hydraulic equilibrium and thus cause fainting or, possibly, even death; and nothing could better suggest the reality of joy's cardiac effects. Tuke cites the case of Lucretia Davidson, "the precocious American poetess who died at seventeen:

"Her susceptibilities were so acute, and her perceptions of beauty so exquisite, as to cause her to faint when listening to some of her favourite melodies from Moore. Yet notwithstanding this serious impres-

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sion, she would beg to have them repeated, so delicious were the sensations produced." The influence here, however, thinks Tuke, was both emotional and sensory, with the former as "the proximate cause of the heart's temporary failure."

Several authentic cases are in the literature of death from supposed heart collapse, due to joy, but none are near enough in time or in space to convince one that they were not in reality due to apoplexy, or to the bursting of an aneurism, or to other special dangers dependent on a sudden great rise of arterial blood pressure. Only in a philosophic discussion of teleology and the like would the matter be of importance; certainly not here, for no one has ever shown that the danger is due to physiologic rather than to pathologic conditions.

The heart, however, is not all there is to the circulation, but only one of its five or six causes, although the chief. The arteries

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are also important organs and have noteworthy, active, emotional influences. Activity of an organ always demands an increased blood-flow thither which, as in the case of voluntary muscle, may be as much as five or six hundred per cent. Blood, like other liquids, being practically incompressible, this increase must be made possible by dilation of the peripheral arteries or by hastening the blood-stream through them, or by both. The last is the most likely, dilation lessening the blood's friction and the increased output from the left ventricle, due to the increased rate always seen in emotion, circulating the blood more often. At any rate, the circulation is an important factor in the bodily aspect of emotion, as we have already seen. The whole matter, however, needs careful study, as does indeed the whole prime function of vasomotion, so vital in emotion. Especially would we like to understand better than at present that

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vasomotor reciprocity which appears to be universal, the muscles, the omenta, the skin, and the brain being the four chief users of blood and respective receivers of it when, by widespread vasoconstriction, it is expelled from some other place. Thus, acute joy (contrast it with fear and grief!) means congestion of the skin, especially of the head and neck, and of the locomotor muscles and those of personal expression in general. But the congestion lessens and becomes more general in the more chronic forms of pleasant emotion. It is not to be doubted that in this general stimulation of the essential circulation in all constructive parts of the body, such as the brain, the muscles, and the digestive organs, joy exerts one of its most conspicuous benefits, and one that no one can doubt or ignore.

Little though we know as yet about blood pressure in its relation to emotion, we can suspect that it, like blood supply, means

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much in the physical aspect. It is certain that the average physician in taking at random and only once or perhaps twice the blood pressure of a patient, is running great risk of being misled in at least a tenth of the cases, and from that ratio up in proportion as the autonomic nervous system is worried, fatigued, or unstable, from any other cause.¹ As we shall see, this condition is just the negation of joy and is therefore relevant here. Joy, on the other hand, and happiness, certainly make for a firm, sustained blood pressure, not high, but higher than the atonic and depressed condition some unpleasant emotions exhibit.

On the other hand it seems likely that

¹ G. V. N. Dearborn, "The Blood Pressure in the Leg in Various Positions; the Brachial Pressure after Short Maximal Exercises; and the Normal Pressure in Physically Trained Individuals; With an Appended Preliminary Note regarding the Blood Pressure's Autonomic Rhythm", *American Physical Education Review*, XX, 6, 337-352, and 7, 414-423. (June and October, 1915.) The "appended note" contains a suggestion that the blood pressure is mysterious yet, and a generally misleading fad.

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the depressive states of "antijoy" exert on the vasomotor blood-pressure rhythm some sort of far-reaching confusion comparable to that which they impose upon the digestive rhythm as observed by Cannon and others.

As for acute variations in blood pressure in affective states, the author is at present of the opinion that the two generally opposed sides of the emotional balance act for once similarly, and cause a rapid rise of pressure. Thus in one case an imaginary kiss caused in ninety seconds a rise of at least twenty millimeters of mercurial pressure; while in another individual a suddenly recalled grief raised it in less time thirty per cent more than that. In a bright girl (A. K. B.) of thirteen the chance recollection of breaking a highly-valued plate belonging to her mother caused a quick rise of twelve millimeters in the arm-blood-pressure. Office-readings are regularly higher at first than ten minutes later.

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I have seen the pressure rise from one hundred and thirty-five millimeters to two hundred and thirty by one hundred and fifty seconds of breath-holding, and in the same man (Dr. J. G. S.) have seen it fall twenty-four millimeters below its base of one hundred and thirty-five in a few minutes by voluntary bodily and mental relaxation after the useful manner of the Hindus. This is a total voluntary difference of one hundred and nineteen millimeters of mercury within three minutes in the blood pressure of a normal man. With such a range controllable from the voluntary cortex of the brain, who is going to deny the importance of this blood-pressure factor in the general combined emotional and deliberate control characteristic of the invigorating self-possession of joyous behavior?

On the other hand, anxiety continued for many weeks or even days produces, as already hinted, a variability in the blood

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pressure which I have named its autonomic rhythm, and which is now under investigation in the institutions where my research work on normal people and on the nervous is done. I have almost come to regard a well-defined rhythm as in some degree diagnostic of something akin to an anxiety-psychosis in the individual. It is obvious that in persons with brittle arteries, a condition normal to advanced life, a large variation of this kind might endanger health or cause death from apoplexy. Hack Tuke, already referred to (page 80), cites evidence, very appropriate during this the Great War, to indicate the prevalence of apoplexy when men in general are anxious or otherwise for long deeply troubled, that is, joyless:

“Doctor Rush in his essay ‘On the Influence of the Revolution upon the Human Body’ states that more instances of apoplexy occurred in the city of Philadelphia in the winter of 1774–1775 than had

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been known in previous years. He says, 'I should have hesitated in recording this fact had I not found the observation supported by a fact of the same kind and produced by a nearly similar cause, in the Appendix to the practical works of Doctor Baglivi, Professor of Physic and Anatomy at Rome. After a very wet season in the winter of 1694-1695, he informs us, "apoplexies displayed their rage; and perhaps some part of this epidemic illness was owing to the universal grief and domestic care occasioned by all Europe being engaged in a war. All commerce was disturbed, and all the avenues of peace blocked up, so that the strongest heart could scarcely bear the thoughts of it." [Cf. A.D. 1915.] The winter of 1774-1775 was a period of uncommon anxiety among the citizens of America. Every countenance wore the marks of painful solicitude for the event of a petition to the throne of Britain, which was to determine whether reconciliation,

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or a civil war, with all its terrible and distressing consequences, were to take place. The apoplectic fit which deprived the world of the talents and virtues of Peyton Randolph, while he filled the chair of Congress, in 1775, appeared to be occasioned in part by the pressure of the uncertainty of those great events upon his mind. To the name of this illustrious patriot several others might be added, who were affected by apoplexy in the same memorable year.' ”

Almost every reader, if he hark back over his observations of acquaintances, can readily recall some who have unaccountably died soon after the access of a vast grief, a commercial catastrophe, disgrace, or some other personal disaster intense enough to depress more or less chronically the emotional tone and make joy impossible. It is likely that a majority of such victims of Nemesis, if not all of those in any small group, “passed on”, as they who avoid the word death would

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say, from conditions of the same general nature as apoplexy, — oozing of blood from perhaps a multitude of cerebral arterioles thus congesting and deranging perhaps a large region of the dominating brain, and leaving the vegetative, impulsive life to unknown impossibilities. Such mental attitudes are typical opposites of that attitude we express in this book by the more or less symbolic term joy, organic happiness.

Robert Burton in his famous “Anatomy of Melancholy”, 1652, lends good advice for the cure of “melancholy” under which our state of antijoy would be included:

“Mirth and merry company may not be separated from music, both concerning and necessarily required in this business. ‘Mirth’, saith Vives (*de anima lætitia*, lib. 3), ‘purgeth the blood, confirms health, causeth a fresh, pleasing, and fine colour’, prorogues life, whets the wit, makes the body young, lively, and fit for any manner

THE INFLUENCE ON THE CIRCULATION of employment. (*Schola Salern.*) The merrier the heart, the longer the life; 'A merry heart is the life of the flesh', Prov. XIV. 30; 'Gladness prolongs his days', Eccclus. XXX. 22; and this is one of the three Salernitan doctors, Dr. Merryman, Dr. Diet, Dr. Quiet, which cure all diseases."

The cosmetic values cannot indeed be properly ignored in this connection, for beauty, one of Life's fundamental assets, has as much to do with the blood and its distribution as with the nutritional plumpness and so on of the tissues. Of all current sophistry, none is more transparent or worse misleading than that which claims beauty to be only skin deep. To physiology, knowing of the unenvious truth, beauty is as deep not only as the configuration of the skeleton, the muscle, and the fat deposits, but as the heart and adrenals and intestines themselves. The stheneuphoric index (see page 198) gets

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capital indication in the appearance of one's face and general posture. We have all seen in the faces of our fellows the crushing or the crumbling of a soul! and the finger of death from a broken heart or mangled life-hopes or shattered courage writes in symbols that all understand (but which it were hard to describe and in detail account for) the imminent loosening of "the silver cord." People have often been known to "grow old" in a month, in a week, in a night.

Tuke quotes from a letter of Doctor Boggs, written in Paris during its siege to the *London Lancet* and dated 21 June, 1871:

"The only hope of the Parisians which they fondly cherished, and which, in a great measure, kept them alive during the siege was most cruelly blighted, and you may imagine their disappointment when the capitulation of the city was announced; the mental shock to some was such that

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they almost lost their reason. . . . But the most remarkable effect of the siege was the aged appearance of some of the inhabitants ; men and women alike seem to have passed over at least ten years of their existence in half as many months. A friend of mine, a distinguished practitioner in this city, nearly fifty years of age, has become so gray and wrinkled, and such other changes have taken place in his constitution, as to give him the appearance of a man of sixty.”

Many a face (and head and figure), we may be sure, bears the plain impress of the crisis of August, 1914. These things are real and count in human values. We must let them teach us what they can.

Finally, consider that nothing in the world or above it can develop vigor and promptness and certainty and adaptability in one's circulatory mechanism (important and correlative factor in all our living as it is in all our joy) like abundant,

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gross, outdoor exercise, — the richest phase of purely bodily activity. We shall have occasion to refer to this again in our few and simple therapeutic suggestions for those who seek them.

CHAPTER IV

The Influence on the Nervous System, Etc.

BEFORE considering this influence of joy on the nervous system, a clear understanding of one matter, at once physiologic and psychologic in nature, must be attempted. Its physiological difficulties must neither repel nor discourage us, chiefly, it must be admitted, because we shall leave them to some ingenious future physiologist to explain! The matter to which we refer we may not inappropriately term the affective balance.

No modern psychological discussion has been more widespread in range or less satisfactory in accepted result than that concerning the real nature of what is frequently termed pleasure and pain, including pleasantness and unpleasantness. The

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reason for this seems at least twofold: On one hand, some psychologists and more philosophers have somehow failed to appreciate the modern evidence that the problem as stated of old is not in reality one problem but two, very different, namely, that of pleasure and pain and, second, that of the affective balance as we have called it, of the feeling of pleasantness and unpleasantness. The actual physiologic evidence may not be presented here, but it is the assumption of this little book that pleasure and pain are separate sensations, each with its own nerve apparatus. Pleasure and pain proper are powerful incentives to and arousers of emotion; and often are casual elements of the total emotive behavior and consciousness, just as are sensations of smell or of heat or of sound. But the affective balance, the feeling of pleasantness or of unpleasantness, certainly is an integral part of the emotional phenomena, however

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closely it may be masked, and moreover (especially germane to our present purpose), it serves to link the feelings as physio-psychological periods to the general welfare of the personality with an inborn right to be healthy as well as happy, happy as well as hale.

No one has formulated the most advanced point of view of the individual as a conscious and dynamic unit better than Harald Höffding of Copenhagen in his "Outlines of Psychology": "The unity of mental life has its expression not only in memory and synthesis [the "associative memory" of the biologists], but also in a dominant fundamental feeling characterized by the contrast between pleasure and pain, and in an impulse, springing from this fundamental feeling, to movement and activity." This "dominant fundamental feeling characterized by the contrast between pleasure and pain" and this "impulse springing from this funda-

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mental feeling" are emphatically the key-notes of the recent sciences of behavior and of psychotherapeutics, and relate the personality closely to its dynamic environment, thereby, to a degree, explaining both.

This contrast between agreeableness and disagreeableness has been variously named, and is often spoken of when the usage is unilateral, as the emotional tone or the feeling tone. The most recent expression, perhaps, is affect, but this term in practice leads to some confusion with the familiar word effect; its use, however, generally is expedient, because it tends to emphasize the theoretically important independence and substantiality of the emotional tone, pleasant or unpleasant, and so to lend it the due value.

The various feelings (including the emotions) may be arranged roughly in three groups according to the tones of their "dominant fundamental feeling", and if

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we do so, we have a table like that which follows :

THE AFFECTIVE BALANCE

PLEASANT		NEUTRAL OR VARIABLE		UNPLEASANT	
Joy	} Emo- tions	Indignation	} Emo- tions	Fear	} Emo- tions
Contempt		Intoxication		Grief	
Love		Magnanimity		Hate	
Pride		Mirth		Shame	
Admiration		Mockery		Anxiety	
Arrogance		Modesty		Apprehension	
Audacity		Recklessness		Chagrin	
Avarice		Recognition		Chill	
Benignity		Repentance		Cowardice	
Condescension		Satiety		Desolation	
Confidence		Security		Discord	
Courage		Self-love		Discouragement	
Curiosity		Self-satisfac- tion		Disgust	
Defiance		Sensuality		Distrust	
Desire		Sympathy		Ennui	
Disdain		Vanity		Envy	
Emulation		Veneration		Irresolution	
Enthusiasm		Vengeance		Jealousy	
Esteem				Misery	
Generosity				Moroseness	
Glory				Nausea	
Greed				Regret	
Hope				Remorse	
Impatience				Timidity	
				Vertigo	
				Weariness	

These lists include all the separate feelings which I could find and they are assorted strictly according to their respective tones of pleasantness or unpleasantness to the individual "having" them. Inspection of the three lists makes it obvious that nearly all the feelings and emotions have

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a distinct emotional tone, on one side or the other of the great balance of sentient experience, which above all others whatsoever divides our mental world — on the one hand the pleasant, on the other the unpleasant. Moreover, it is clear from inspection of the two longer lists that the self-pleasing feelings in general represent a larger degree of activity and energy expenditure than do the unpleasing feelings, which suggest, most of them, limitation of movement, depression, relative inactivity. Conspicuous apparent exceptions to this principle (which I have elsewhere christened the stheneuphoric index) are anger and hate and especially fear. But fear, when extreme, is actually paralyzing in its depressive influence. Hate and anger are true exceptions apparently, for special reasons suggested in the next chapter, although hate is not inherently and characteristically an activity-producing emotion at all.

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The proper biologic standard of the bodily aspects of emotion are to be seen only in the relatively uninhibited, in brutes namely, and infants, and low-grade savages, each naïve in his own way. This matter, so essential if we would really understand the nature of emotion, the author has already set out in a little monograph on "The Emotion of Joy", 1899. To repeat what was there said :

Pursuant to the conditions of civilization and in particular of man's necessary struggle for existence, an intricate system of restraints and artificial restrictions has been gradually and inevitably developed by many centuries, how many no man dare say, of constantly acting motives leading to continually deeper-fixed modes of willing and conduct. Many of these motives for restraint have brought about habits which are in effect instincts, and so numerous are these that in civilized lands it is uncommon to find any emotion expressed

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in the case of adults in that perfection of naturalness which elsewhere and among wild animals regularly obtains. In the infant the restraining process is begun regularly in its earliest months, and continues, either by deliberate instruction or by example or else imitatively, through life, none escaping wholly and few in any considerable degree from the all-mastering force of this advantageous restraint of once-natural bodily functions. Even the domestic animals display something of this universal influence. . . . The restraining motives are in reality complex and inter-involved to a degree proportionate to the social intricacies from which they have arisen ; we can, however, suggest a few of those which act directly to restrain such of the emotional expressions as would be manifestly harmful to some degree to their subject, and some of these are here listed, as applicable to ten of the commonest, most pronounced, and well-defined of emotions :

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MOTIVES FOR BODILY RESTRAINT

Fear. — Desire to be thought brave. Disadvantage of displaying fear to adversary. Better power of defense through muscular and other bodily control.

Anger. — Knowledge of personal and social advantages of peace. Habitual politeness. Cowardice. Policy. Sympathy.

Love. — Modesty. Prudery. Coyness. Honor.

Grief. — Fear of ridicule. Fear of pity. Modesty. Resignation. Vanity (wrinkles). Policy. Pride.

Hate. — Advantages of peace. Policy. Politeness. Benevolence. Cowardice. Self-respect.

Shame. — Pride. Arrogance.

Pride. — Fear of ridicule. Policy. Politeness.

Surprise. — Policy. Politeness. Pride.

Contempt. — Cowardice. Policy. Pride. Sympathy.

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Joy. — Dignity. False politeness. Modesty. Policy. From reflection, by contrast, on grief and pain. Other-worldliness. Pessimism. Vanity.

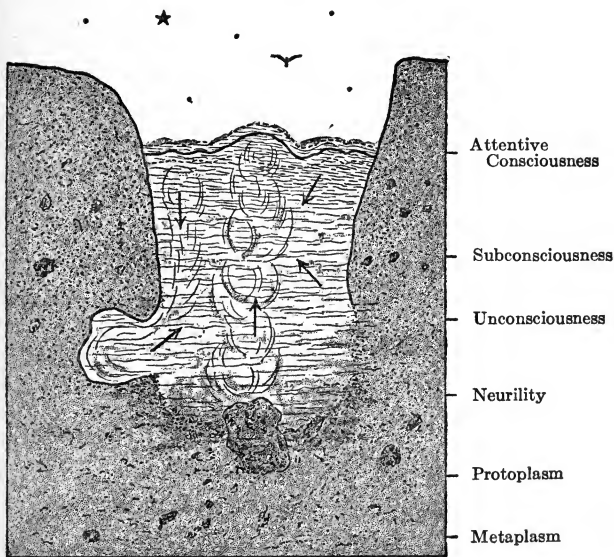
From such reasons for restraint, of which these are but a few cursory examples, it will be obvious to all that actual objective behavior is not an adequate criterion of subjective emotion. It is, rather, the symbolic *innervations* probably which count, even though they lead scarcely even to an increased tone in the parts of the action-system which they supply.

The most important use, perhaps, served by the emotional states tabulated a few pages before is that it makes explicit that a contrast does in general exist in the feeling-world, with joy at the top of one, the agreeable, side, and terror (paralyzing fear) at the bottom, so to say, of the other. Our next discussion will concern the neural energetics of this dominant contrast, of the affective balance, and will attempt to ex-

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plain the mode of operation of the affects on the nervous system, especially that of joy, so deep at the foundations as well as so prominent on the battlements and banners of the human castle of personality.

THE STREAM OF MIND¹



¹ The figure is from the chapter on the mental process in the writer's "Text-book of Human Physiology." Philadelphia and New York, 1908.

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The great pedagogical usefulness of James's famous metaphor of "*the stream of consciousness*" has not been, as a general thing, fully realized, although noticed sufficiently to be classed by some over-logical psychologists as one of the "Wundtian myths"; and fairy stories are good for the soul. The foregoing sketch may represent a vertical transverse section of the stream called *Mind*, deep and active and complex, with many recondite features. Determining the direction of the stream, to some extent, is the material ground, but this latter is also much influenced and affected by the stream through it. The stream itself comes from some place above its channel and ground, but is inseparable from the latter while it flows. The surface of the stream is not a little like the ever-varying film of attentive consciousness, cognizant of the heavens above and of the earth beneath, and with a continuity, however diaphanous and variable. Beneath the conscious film is the subconsciousness, and this constitutes the more substantial "mass" of the mental stream — the portion which has momentum and inertia in relation to the material conditions of the living world. In its "lower" strata, as, indeed, everywhere else, the subconsciousness is in the closest relationship with the body, and fuses with it, considered as *energy*, in the neurility of the integrating system. The subconsciousness influences and is influenced by not only the bodily energism but by the attentive conscious surface above, so that these two are continually in the most active and complex reciprocity. Midstream at the bottom is an obstruction to the flow, and this (a deformity or a cancer, say) influences greatly by disturbance both the subconsciousness and the consciousness (as well as the body itself) by mental eddies, etc. In one corner of the stream-bed is suggested a hidden and secret cave, into which the subconsciousness and even the clear consciousness may at times flow and be deranged thereby; this is the "family skeleton" or the fixed, bad, instinctive habit. Crawling about on the bottom and more or less undermining it and roiling the water are extraneous creatures of many sorts, all interesting, but frequently, to an unfamiliar understanding, loathsome — fixed ideas, obsessions, vagaries, eccentricities, etc.

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On the other hand, disturbance of the mass of flowing water itself is sure to disturb more or less permanently the "clay" to which it is so closely related. We have thus to think of an acute indigestion from anger, or cardiac paralysis from fear (only that in this correspondence the theory would involve a franker animism than many would readily accept).

Various qualities and conditions of the stream and of its banks, the "material" body, likewise suggest themselves. For example, we might usefully compare the feeling-tone, the affect, of the subconscious and conscious mental stream to the relative temperature, color, freshness or saltiness, clarity or roiliness, etc., of the water in so far as determined by its own nature or by its confining banks. Its momentum and its speed correspond somewhat to the varying impulse to activity, its dynamic status. Its varying influence by the breezes or the gales above it, sunlight or moonlight or the dimmest starlight, rippling over its surface only or shining boldly into its depths, represent but inadequately some of the influences that come from Nature into our wondrous Life.

The whole makes an Unity whose only invariability is unending change — yet always with a progress; but whither, as whence, we do not know.

"Enthusiasm is the thing which makes the world go round. Without its driving power nothing worth doing has ever been done. Love, friendship, religion, altruism, devotion to career or hobby, — all these, and most of the other good things in life, are forms of enthusiasm." These sentiments, expressed in the words of R. H. Schauffler, writing in the *Atlantic Monthly*,

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suggest the burden of the present chapter. We may almost summarize this chapter in the simple statement that joy greatly increases and sustains the operative enthusiasm of the nervous system and of its effectors, the muscles and the glands. Our task now is to tell how.

Unless our present neurology be vain, an inner portion of the brain, the "optic thalamus", at once great, receptive depot of sensory influences and "center" of emotional reaction, distributes nerve impulses to the entire cortex of the hemispheres, although its means of doing so effectively are by no means understood as yet. The corpus striatum too, another interior brain center across the way from the thalamus, now known to be the regulator of voluntary muscular tone, must here have a part, and in this respect is probably the correlate of the adrenal medulla, whose secretion (adrenin), as we have seen, adapts the tone of the vegetative

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muscle. We may thus think, at least tentatively, of the great brain cortex, composed of nine or ten billion nerve units, or "neurones", as in continual receipt of that very complex mass of afferent or at least of ascending influence which represents every part of the always moving body, and which we term cenes-thesia including kinesthesia. This energy may be in part environmental, sown in the "receptive fields" of the sense organs and coming more or less directly from them; in part, however, it must represent fusion products in the spinal gray matter, and come from the mutation of vital energies in the body itself and the central nervous system.¹ In these matters much research is needful for certainty, but the probability in general seems to be as stated.

On this hypothesis, it is obvious that

¹For a somewhat new view-point see G. W. Crile: "The Kinetic System" in his "Origin and Nature of the Emotions", Philadelphia and London, 1915.

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the cortex with its billions of interknitted nerve units represents the *meeting place*, so to say, of gladness and of activity, of rapidly expending energy and of joy. Here is a direct influence of some aspect or other of bodily and mental liveliness or vivacity on the pleasant side of the affective balance, since, other things being equal, unusual activity is in itself a delight. The cortex, then, the commonly supposed seat of consciousness because of its preëminence in integration, becomes the direct correlator of activity and joy.

But more explicitly the nerve-cell bodies have been actually seen to be in some mode each a store of energy, either properly neural or nutritive or both. This has been demonstrated especially by Hodge, Dolley,¹ Austin and Sloan, and by others.²

¹ D. H. Dolley, "The Morphologic Changes in Nerve-Cells Resulting from Over-Work in Relation with Experimental Anæmia and Shock", *Journal of Medical Research*, 1910, XVII, 95-113.

² See footnote, page 142.

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Ample nourishment stands on the one hand for good humor, other things equal, and on the other hand for plump, normal nerve cells eager for action, — we may almost say “enthusiastic.” But fatigue means fundamental unpleasantness, shrunken, depleted nerve cells, and a strong tendency to bodily and mental rest; and that last is most agreeable.

This general subject of fatigue is an essential one in our present purpose, for in probably an actual majority of cases it is the primary condition of “antijoy.” Many have been misled by the studies of the earlier modern physiologists (Mosso, for example) on “muscular fatigue.” In the actual living organism, this does not occur ordinarily, for it is one of the functions of the nerve cells to serve as a complex safety valve for the body and mind and especially for the nervous system itself, lest they become unduly tired even to exhaustion; and nutritional depletion is not

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quickly repaired. This safety-valve action, as already has been hinted, brings about discomfort, then weariness, then sleepiness under fully normal conditions, and so tends to restoration. Were not most people continuously under the stimulation of caffeine (from tea or coffee), theobromin (from cocoa and chocolate in liquid or solid form), or nicotin (from tobacco), this natural resting-mechanism would be seen to be far more efficient and more nearly universal in its action than it appears to be under present restless conditions.

But aside from the omission of these three chief alkaloidal principles from one's diet, there is another efficient means for securing abundant sleep that is open to all who are not already beyond its use, namely, gross muscular exercise, especially tramping and skating in the open air and swimming in the open water. (Automobiling will not answer the requirement.) Such exercise normally fatigues

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at least two thirds of the entire muscle-mass of the body and thus demands sleep by a sensation of fatigue which, be it noted, is a distinctly pleasant experience, wholly unlike the wretchedness of nerve fatigue proper, containing elements of nervousness.

In 1913 C. M. Gruber made observations (presumably under Cannon's direction) which add an element wholly new to our physiology of fatigue and rest. It supplies one more function to this seemingly very versatile and puissant secretion that we have spoken of usually as adrenin. This is known to be a doubly rotating substance closely related chemically to some of the putrefactive products from meat. This last is a fact highly suggestive, it may appear, to the shouters for consistent vegetarianism, for it may have much importance in explaining the lack of initiative, obvious as "Oriental passivity" and fatalism, and in the persisting rela-

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tive barbarism or worse, in races of long-standing vegetative habit, — they are inert from necessity, it appears, not from choice.

This relatively new scientific material on the physiology of adrenin, supported by ample and exact work on the irritability of muscles and its loss and recovery, shows, says Cannon,¹ that the substance has “a very remarkable action, that of restoring to a muscle its original ability to respond to stimulation, after that has been largely lost by continued activity through a long period. What rest will do only after an hour or more, adrenin will do in five minutes or less.” Applying this statement in our present argument for the continual expediency of good-humored busy-ness, for energetic and joyous activity of mind and of body, as a cure for dullness of spirit of whatever origin, we find it a new expla-

¹ For the privilege of making this quotation from “Bodily Changes in Pain, Hunger, Fear, and Rage”, we are greatly indebted to the publishers of the book, D. Appleton & Co.

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nation of the general pleasantness of emotional experiences, however fatiguing on the ordinary basis of widespread neuromuscular activity.

Did space allow, we should here consider certain organic factors of the theory of music that are not yet common knowledge nor even enough appreciated in the technical science of music; but the consideration of these must be postponed to a possible exposition elsewhere. Just here it must suffice to point out how primary and how universal and (usually) how intense is the joy in real, that is, reactionary, rhythmic music, and that too whether it come from the single series of sounds of one violin or from the mighty complexity of the orchestra, with its ninety or more instruments. The aberrations of the artificialists pass one after the other and are forgot, save by musical historians, but the harmonies that penetrate our brain cortexes and by that door our glad-

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dened souls, which make our muscles throb and dance in response, be it even a "dead march" or a requiem, will endure forever and rejoice the world. In such music, joy and activity (unless artificially inhibited on the common principle already explained, see pages 57, 126) actually coalesce, and their essential identity is directly observable.

In the dance, which is music personified or personality musicized (may we devise the word), as one pleases to state it, this identity is still more obvious but in theory masked by sundry extraneous conditions of dancing. In both the dance, however, and in our enjoyment of music of the strongly rhythmic kind, the kinesthetic and cenesthetic factor is obvious enough, and kinesthesia is the kinetic mental index of the body's general activity.

The epithelium, or gland tissue, in similar way, but to a very much less degree psychologically, is concerned with the relations of joy to the nervous system, one

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of whose "effectors", in the fashionable neurology of the day, it is. The reader need only observe this factor of his or her emotional behavior for a few days, to appreciate the part played by the digestive, mammary, sexual, sudoral, and lachrymal glands. Secretory adaptation, as we have seen, is a duty of the autonomic nerves.

Here, too, to be systematic, our remarks on the proven direct relationship between adrenin and the action of the sympathetic (see page 13) must be recalled, especially the circumstance that the action of the concerned nervous system, the consequent contraction, in some cases, of smooth muscle, and the putting forth of adrenin, are all indispensable parts of the one and the same process of increasing certain vegetative activities. The adrenin, then, like the dextrose of the blood, is a factor in the influence of pleasant emotion through the agency of the nervous system.

There is undeniably a strong element

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of autosuggestion in many cases of continued dissatisfaction and unhappiness, often rising to an obsession, or to what Morton Prince¹ terms a subconscious psychosis occasioning it may be a "fear-neurosis." "Old Chremes" (*"Heautontim."*, I, 2) reminds us that "Parents, friends, fortunes, country, birth, alliance, etc., ebb and flow with our conceit; please or displease, as we accept and construe them, or apply them to ourselves." Of course autosuggestion and habit really are frequent elements in contentment, many having fallen into this slough without ever realizing they are there and many others without the means to climb out or the psychotherapeutic friends or advisers to pull them out. Says Prince (page 368): "It is obvious that in everyday life, when by arguments, persuasion, suggestion, punishment, exhortation, or prayer we change the viewpoint of a person, we do so by building up

¹ Morton Prince, "The Unconscious", New York, 1914.

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complexes which shall act as settings and give new meanings to his ideas. I may add, if we wish to sway him to carry this new viewpoint to fulfillment through action, *we introduce into the complex an emotion which by the driving force of its impulses shall carry the ideas to practical fruition.*”

The ideal emotion for this purpose, both as a matter of personal pleasant experience and as a matter of scientific theory, in part set forth in this book, is joy, organic happiness.

Both through the psychology of interest and by its own physiologic conditions, it may be, gladness makes more effective all kinds of *suggestion*. This becomes, therefore, a plainly important matter, however far from plain itself, in the beneficial action of joy, and to suggestion we may properly, if briefly, turn our attention. Its theory, like its practice, has been very largely discussed since the days of Braid and the early hypnotists, but its precise

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neurology awaits real knowledge of the brain's mode of action. With its large practical importance in many directions of life no one can for a moment be in dispute, — education, therapeutics, industrial publicity, at least, are already greatly its debtors. Whatever Eddyism may do toward making its devotees happier and healthier it accomplishes, it is likely, through suggestion and a habit of joyousness!

On the perhaps obsolete theory of the human cortex which maps it out wholly in horizontal areas, some motor, some sensory, and some (entirely because they are electrically irresponsive!) “associative”, no satisfactory theory of suggestion is at hand. On the more recent embryologic suppositions of Brodmann, Bolton,¹ etc. (namely, that the architecture of the cortex should

¹ J. S. Bolton, “A Contribution to the Localization of Cerebral Function, Based on the Clinico-Pathological Study of Mental Disease”, *Brain*, XXXIII, Pt. 129.

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be considered in layers from without inward rather than in more or less homogeneous areas side by side), suggestion has at least an imaginable neuronie basis, and its close relationship to pleasant emotion as well.

It will be recalled that the two logically opposed yet practically complementary phases of the individual (vegetative impulse and voluntary control) have been insisted upon as a fundamental principle essential in most psychological discussions. In the case of suggestion, this opposition is vital. Ordinarily, the action, "enthusiasm" supplied by the vegetative mechanism (and mentalized by the lower layers of the great cortex, perhaps?) is made more rational and personally adapted by the continuous supervision and restraint of the personal will and intelligence and feelings. In suggestion, on the other hand, the personal-control apparatus is for the time in abeyance, oftentimes by deliberate

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consent and often too unconsciously, but then for the most part only when the "aura" of the suggested idea or behavior is enjoyable, at least to a slight degree. Keatinge,¹ in his admirable work on pedagogic suggestion, notes as the fifth of the required characters of a suggestive idea that it "must bring pleasure or pain", and most of the conditions of successful suggestion noted emphasize likewise the necessity of an affect, an emotional kick or tang, to give the idea vigorous effectiveness. Suggestions inherently pleasant furnish directly their own affect, while it is only under conditions where fear may be used as a threat (as in an English boys' school) that the unpleasant suggestion commonly exists at all. Pleasantness therefore, it is seen, is generally a conspicuous part of successful suggestion; it may even be not

¹ M. W. Keatinge, "Suggestion in Education", London, 1907. A pioneer book to which there should be many successors, for it is an almost untilled field.

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improperly considered one of its inherent factors.

Suggestion then is the more or less impulsive determination of a motive through influence exerted on the associative "resultants" of the cortex, and implies a lessened control from the more purely voluntary and personal correlations as well usually as a narrowing of the field of consciousness. These conditions would seem to be met neurologically, were one bold enough to suggest it, by supposing on the Brodman-Bolton idea of the cortex a strong afferent or ascending flood of neural influence through the optic thalamus (emotional "center") into the cortical mid-layers so as to impair somewhat for the time the personal restraint, with the substitution therefor of partial motor control from the incoming neurility. Problems of hysteria, of subconsciousness, and of Freudian suggestion, sublimation, and submersion would seem to be easier of

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understanding, should ever this neural basis be generally certified.

Already we have noted briefly the conditioned secretory reflexes (page 76) discovered in a way and described by Pavlov. The matter comes into the present connection as a demonstration for the use of all and sundry of the ease with which even the most arbitrary and unnatural associations are developed and fixed even in the least voluntary parts of the nervous system. During the last year Watson,¹ psychologist at Johns Hopkins, has demonstrated not only how readily such sensori-secretory complexes are created and fixed in man, but also that the same enlightening facility belongs likewise to the motor reflexes (as well as to the secretory).

Such work is making the framework of the subconscious mind so solid and substantial, so plain and obvious, that no

¹J. B. Watson, "The Place of the Conditioned Reflex in Psychology", *Psychological Review*, XXIII, 2, March, 1916.

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old-fashioned psychologist, even one who still limits mind to consciousness, can cavil. For the sufferer from bad habits of emotion, "temperament", worry, neurasthenia, "antijoy", all this work must inevitably serve as a rock of salvation, so that no one of them henceforward can doubt that his relief lies in his own personal persistence in the effort to be renewed.

Thus, even in such sketchy and utterly inadequate outline, pleasant emotion, organic happiness, is seen indubitably to further the all-essential functions of the nervous system in its work of integrating the parts of the body and the body as a whole with its ever-changing spiritual and material surroundings. To any one familiar with the supremacy of this integrating fabric of energy paths in the individual organism, this phase alone of joy's influence were almost enough to show its practical value in our life. But, as we have seen, the musculatures, both voluntary

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and vegetative, are part and parcel, functionally speaking, of the nervous system, and so are all the glands. Thus almost the entire mechanism of efficiency directly benefits by the "enthusiasm" which good humor and happiness involve, and it is this mechanism which at once conditions and makes possible the progressive personality of man and woman.

Professor C. Judson Herrick, "An Introduction to Neurology," Philadelphia and London, 1915, is judged to be the best book on neurology for laymen so far published.

CHAPTER V

The Love-Life

WE are authoritatively told that “the Lord loveth a cheerful giver”, and surely love is the very index of generosity, and love and joy are so closely interwoven that normal life forever must be full of wonderment, and of a degree of admiration which merges into active gladness. De Morgan puts it well: “All is not Vanity, preach whoso might! So long as Love itself — the mystery of all mysteries — shall remain unsolved, there is an immeasurable music beyond the ‘octave-stretch forlorn’ of our fingers, an unfathomable ocean beyond our little world of pebbles on the shore.” And

“Think, when our one soul understands
The great Word which makes all things new,

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When earth breaks up and heaven expands,
How will the change strike me and you
In the house not made with hands ?

“ Oh, I must feel your brain prompt mine,
Your heart anticipate my heart,
You must be just before, in fine,
See and make me see, for your part,
New depths of the divine !

“ But who could have expected this
When we two drew together first
Just for the obvious human bliss,
To satisfy life's daily thirst
With a thing men seldom miss ? ”

[ROBERT BROWNING.]

“ Love watcheth ”, we find in “ The Imitation of Christ ”, “ and, sleeping, slumbereth not. Though weary, love is not tired ; though pressed, it is not straitened ; though alarmed, it is not confounded ; but as a lively flame and burning torch, it forces its way upwards, and securely passes through all. If any man love, he knoweth what is the cry of this voice.”

THE LOVE-LIFE

No one in the world has more beautifully or strongly stated still another aspect of love than E. R. Sill:

“A troop of babes in Summer-Land,
At heaven’s gate, — the children’s gate :
One lifts the latch with rosy hand,
Then turns, and dimpling, asks her mate —
‘What was the last thing that you saw?’
‘I lay and watched the dawn begin,
And suddenly, through the thatch of straw,
A great, clear morning-star laughed in.’
‘And you?’ ‘A floating thistle-down
Against June sky and cloud-wings white.’
‘And you?’ ‘A falling blow, a frown —
It frights me yet; oh, clasp me tight!’
‘And you?’ ‘A face through tears that smiled —’
The trembling lips could speak no more,
The blue eyes swam, the lonely child
Was homesick, even at heaven’s door.”¹

With such a variety of aspects of love (and self-love is not represented) and each plainly a delight not only to the lover but

¹ For permission to quote this poem we are indebted to the publishers of Mr. Sill’s poems, Houghton, Mifflin & Co., Boston.

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in general also to the loved, the close relationship of joy to this one other foundation of our living scarce needs exposition. And yet there are some special considerations to be noted, even though love is known by all to be the very quintessence of joy.

One of these things is that joy is also the very quintessence of love, in that it stands for satisfaction, is indeed satisfaction personified. Just as body reduced to its ultimate material terms is motion, and mind reduced to its ultimate mental terms is experience, so joy, gladness, delight, happiness, rapture, pleasure, bliss thus reduced is *satisfaction*. This concept can be simplified no further save by the make-shift of saying that it is wished for by every one under normal conditions; that all animals wish it in some or other of its aspects. Love includes every phase of that desirable experience. It is to be especially noted, however, that frequently pain and

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even agony give keen satisfaction, as for example to the mother, to the martyr, and to the hero, at times.

But pain which is continuous for long breaks the courage inevitably through nervous depression which in turn has its basis in neuronal depletion. In hysteria, conditions less organic produce much less injury to the personality.

But our proper topic in this chapter is more expediently the practical love-life of the everyday round,—the love-life of sweethearts married or only betrothed, of parents and children, of brothers and sisters, of lifelong, intimate friends. Nothing in this great world is sadder than the occasional mortal who would have these but has them not. Children no longer, in civilized lands at least, have to lead years of loneliness and wretchedness, for the universal process of association soon gives them at least a vicarious love for those with whom society bids them live; but

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old people and folk who are growing old alone still suffer more than they should for lack of love and thereby of joy, haunted by the joys that have been and are for them no more. Next to the abused and neglected child, cold and hungry, the most joyless thing on earth is the lonely old woman or old man, whether rich or poor.

On the other hand, as we look about, on the opposite side of the art gallery of life, the paintings and the sculpture are more joyous. The dominant picture is the normal family, at first two, and then three, four, five, six, or more. Here's joy typified, at first partly selfish, although in the guise of loving the other, but gradually sublimating itself or being sublimated and transferred, rejuvenated, into the next generation.

And here are we at another of the deep secrets of the nature of joy: its continual close alliance sometimes with actual youths and always with youthfulness, whose very

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spirit joy is. The Preface essentially "says my say" in this particular, and it need not be repeated: the adult is not properly superior to the child any more than man is to woman, — only different; equivalent, though not equal. But "middle age" (and that usually indicates about two-thirds age) has no other task to do in the years to come more essential than *Rejuvenation*.

The rejuvenation that is referred to is not the cosmetic process, external or at least no farther internal than the molar teeth; it is not the systematic endeavor of good dear Grandma to recall herself at the joyous age of twenty; "the man with the broken ear", about which About tells us, was far more successfully restored! The rejuvenation intended is that kind of *living* (not thinking) *backwards* which brings real joy, and not its pretense, into the heart and brain and muscles, lending them years additional of life.

If, as is likely, we may accept Minot's

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dictum that rejuvenation depends on the increase of the nuclei of body cells, primarily organs of reproduction, the production of offspring even in technical biologic terms is a process by which the parents tend to become young again. Psychologically the principle holds quite as well, and our children, our normal "nuclear increase", lead us back, if we are wise and natural, to Halcyon, the telluric land of happiness. Without children, the love-life of the really normal man and woman is apt to be at first (after the novelty of the new association has inevitably worn away) only an empty but wistful shadow of contentment which later sometimes withers into a specter, if not, as more of the years go by, into an ogre, a were-wolf, a lonely horror unpleasant to contemplate. This *rejuvenation of one generation by intimacy with the next* is a matter of much practical importance too little cultivated.

Not only as a means of joy, proper, but

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as an incentive to far greater physical activity, is this particular phase of the love-life greatly of import in the practical life of parents. This need not be only a pleasing picture dear to the poets, the paragraphers, and writers of booklets on happiness, but it may be made a most useful and profitable element of the parents' life because it serves not only to make happier the years as they pass but also to make them more numerous, to lengthen life by postponing, under the influence of enthusiasm and effective happiness, the inevitable sclerotic process. These are real things, not ghosts, a perfectly practicable procedure of a father or mother at thirty-five or at forty to do himself or herself good, morally, mentally, and physically, and meanwhile, under good conditions, to be giving the child an ideal start in life. Berle¹ has developed the theoretic possi-

¹ A. A. Berle, "The School in the Home", New York, 1912; and "Teaching in the Home", New York, 1915. These are

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bilities of this association of parents and children farther than most writers, but has naturally emphasized the education of the children more than the rejuvenation and the happiness of the parents. John Locke, Witte, Sidis, Wiener, Stoner, Bruce are other writers of well-known books aimed in the same significant direction.

From whatever angle we may view rejuvenation, few, God be thanked! can miss sympathy with the brief song of "a Harvard man":

"Dreams that the heart doth hold

Shall the later years forget?

Days of the drifted gold,

Shall you fade and wane and set?

Let the moon grow cold, let the stars grow old,

But stay ye a little, yet!"

outlines of a system extremely vital for education, especially if integrated with developed playground work and with basal principles of sense-training such as Seguin and Montessori have suggested. Along this pleasant highway surely lies the inevitable educational reform.

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The five preceding chapters have attempted to make fairly understood the scientific interdependence of emotion inherently pleasant and of vigor in the basal physiologic functions, — namely, nutrition, circulation, coördination, and reproduction. In doing this, be it noted, we have not catered unduly to the agreeable fashion of repeating interesting and numerous actual instances (many volumes of them are at hand), but for the most part have discussed principles, however superficially and fitfully.

Without being explicit at any point, a real and firm ground in all this material, so far, of “words, words, words” (Shakespeare), is the fact that *primitive gladness is properly a food to personality*, rather than

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a stimulant. This opposition and difference is important in physiology, and both fundamental and far-reaching. In my longer lecture-course in the physiology of exercise, we are in the habit of considering and of discussing stimulants (as part of the important work in dietetics) in two classes: The natural stimulants are chiefly bodily exercise, joy, lean meat, cocoa, coffee, and tea, and the unnatural and more artificial stimulants alcohol (properly a depressant, and stimulating only because it poisons and so checks certain inhibitions), tobacco, and certain drugs, such as cocaine, strychnin, hashish, and opium. Inspection shows that two thirds of the more natural stimulants are also foods; for tea and coffee feed the nerve cells, it is now likely, or at least, serve as chromatin-sparers. Certainly joy and its close kindred physical exercise are the most natural of all the stimulants, and Féré in 1901 demonstrated the largely sthenic in-

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fluence of bodily exercise on the organism's actual working power, so that we know that exercise at least is a true stimulant. Bodily activity, if thus shown to be both a natural and an efficient stimulant to life, certainly wins the same potency for gladness; for gladness, joy, pleasant enthusiasm, are but the other aspects of normal organic alertness, vivacity, and efficient action.

Both bodily activity and organic happiness are other names for "holiday", provided the action be of such a nature relative to the agent that it is *relaxation* from the deadly strenuosity of our present restless mode of living which kills multitudes before their natural time.

But as we have said, joy is food, not only a stimulant: it supports while it urges on. It is almost as if the old Roman farmer had used as an ox-goad ("stimulus") not a single sharpened piece of iron held in a handle, but an ever-renewed succulent

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stalk of sugar cane which the patient animal was allowed forthwith to eat, thus helping to make him both strong and active, contented and comely. And certainly it is true in the long life-run, and perhaps, who knows? also in the timeless time to come thereafter, that the final victory of life as well as the victory over death goes to the Happy, especially to the appreciatively happy, above all others. The best that is is theirs, be their every other condition whatsoever it may.

PART TWO
THE NECESSITY OF JOY



CHAPTER VI

Work and Play

WE have built our little bridge out of such materials as we had, and even if it be a bit shaky, or at least swaying to the breeze, we shall venture to pass over it, as we safely may, to live on the other side. Even as we land, we read

State of Happiness

**JOY IS A REFLEX OF THE NORMAL
LIFE-ACTIVITY, AND THEREFORE
AN OBLIGATION. LEAVE INDO-
LENCE BEHIND, ALL YE WHO
WOULD ENTER HERE.**

BY AUTHORITY.

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Above all else indeed (the present essayist contends) is this "slogan" characteristic of the life of Joyland. Surely it is as old as written wisdom and as trite as advice, yet surely too, nothing in the whole long run of human living has a more timely, necessary force than it. Indolence is in some respects the worst of crimes the normal adult can commit against himself. But how misleading is the etymology of the term itself! Trench, quoted in Webster's Dictionary, also notes this: "As there is a great truth wrapped up in 'diligence', what a lie [*sic*], on the other hand, lurks at the root of our present use of the word 'indolence'! This is from 'in' and 'doleo', not to grieve; and indolence is thus a state in which we have no grief or pain: so that the word as we now employ it seems to affirm that indulgence in sloth and ease is that which would constitute for us the absence of all pain." Certainly the word "lie" is most

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appropriate and exact, whoever in the past started its present connotation. It suggests early Italian or French aristocracy when at its falsest, a life-model as far from the wholesome ideal of active and really thoughtful modern men and women as pain is from pleasure. This change is a hopeful sign, even if only temporary, of recent years, — the indolent dude and the idle millionaire are no longer respected by thinking men or women. And popular disrespect and scorn, if they be unanimous and lasting enough, are sure to make anything whatever unfashionable.

The psychobiologic basis of this obligation to be continually active and thereby content if not joyous, already has been set forth, and so needs only brief summary here. Deepest at its roots lies the principle that it is *use* which, by “vasomotion”, regulates the blood supply to any active part, so that disuse, absolute or relative, means a proportionate degeneration of the mech-

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anism concerned. Moreover, owing to the universal action of habituation, activity of any sort which is not somewhat enlarged or at least maintained continuously, tends to lose its conscious voluntary aspect and to degenerate into a mechanical and so less joyous process. Lastly, for our present discussion, activity makes the nutritive draft move more rapidly, and in consequence the vital fires burn more enthusiastically. Elsewhere I have expressed this ¹ and explained it as a raising of the plane of metabolic efficiency. Voluntary or "personal" bodily action involves mental activity, just as the latter, for modern psychology, in a sense depends on bodily functioning, namely, on that of the neuro-musculo-glandular apparatus which by any one of eight or ten media might express the psychic intentions embraced.

¹ G. V. N. Dearborn, "A Syllabus of the Physiology of Exercise" (about sixty thousand words), 3d ed., Cambridge, 1916.

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In the long run it is activity, one's effort and worth, that count and not often chance. An epigrammarian would tell us, as the result of much actual experience, that "four-leaved clovers" do not hide, but are as easily seen when found as their trifoliate sisters. Fortuna's dice are not loaded, surely; but neither are Baalzebub's.

Activity, then, "of both mind and body", adapted to the individual needs in quantity and, to a less degree, in quality, is a substantial biologic need and, in the long run, a biologic necessity. In approximate terms, the more general the activity is and the freer, the less restrained, the more satisfaction or contentment or actual joy pervades it, for then the greater is the "rejuvenation." Such activity or vivacity is indeed a true biologic need and one that nothing whatever can possibly replace.

Indolence and idleness, however, are not only, so to speak, negatively un-

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pleasant by the deprivation of the joy of activities, but positively unpleasant by inherent reasons of physiology and psychology. Indolence, in short, is actually fatiguing and therefore really unpleasant, especially to one who has experienced its opposite. This unpleasantness we of course term ennui, tedium, or boredom, or, very closely allied, disgust. Few states of mind and body have in them more real misery of the common sort, and there is no degree of wretchedness that drives so many, of their own free act, beyond the Great Divide. I believe it to be one of mankind's worst enemies and all the worse because always wholly needless. Were not the large majority of us actually obliged to toil for livelihood, it would be of far greater importance still as an economic problem of humanism. As it is, ennui continuously fatigues and worries thousands, many of whom do not know what it is that keeps them unhappy, "with every-

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thing to make them happy" — save themselves, outcasts from the Kingdom of Happiness who have been condemned by a false understanding of the true values of the common life. Like most other things, sooner or later this form of misery reduces itself to the lowest terms of unfitness of some kind, unintelligence or "abulia", either in the individual or in others on whom in some way he has been or is dependent. In other words, so often heard, "the mills of the gods grind slowly, but they grind exceeding fine."

"Though no checks to a new evil appear, the checks exist and will appear. If the government is cruel, the governor's life is not safe. If you tax too high, the revenue will yield nothing. If you make the criminal code sanguinary, juries will not convict. If the law is too mild, private vengeance comes in. If the government is a terrific democracy, the pressure is resisted by an overcharge of energy in the

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citizen, and the life glows with a fiercer flame. The true life and satisfactions of man seem to elude the utmost rigours or felicities of condition, and to establish themselves with great indifferency under all varieties of circumstance." [EMERSON: "Compensation."]

The indolent person loses out of his one short succession of years the truest and most reliable kind of happiness, namely, that which is inherent in, and proportionately part of the life process itself. The idler misses the flower of his ever passing days.

As we have striven to comprehend, the category Life is comprised of complex processes of reaction and of adaptation that are pleasant, and also of an immanent agreeableness which involves the activity of the entire personality. Thus is that which we have, for convenience, termed joy, an obligation, and when the activity involved is normal, it is also a necessity be-

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cause inseparable properly from the active life itself.

Although by no means exhaustive, the terms work and play include perhaps most of the personal activities, although it is obvious that there are many occupations which are one of these as much as the other, and strictly, therefore, neither of them. This is as it should be on physiologic grounds, since the distinction between work and play is wholly secondary, dependent on criteria extra-physiologic and for the most part psychological or still more arbitrary and personal. One recalls, of course, what is perhaps the most familiar fictional example of this easy transition, in the fence-whitewashing of Clemens's "Tom Sawyer", drudgery converted not only into work, but into frank and conscious play. We need not then attempt to separate work and play; for our purpose, it is enough to think of both of them as forms of activity, of the contrary of indolence. As such,

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with restrictions, each is a delight, and one to which normal living sets no limitations other than those which put an end to the normal life itself.

Despite R. C. Cabot's assertion¹ that "there is an instinct too against the vivisection of this fragile element — joy — from out the tissue of working life", we must try, but very briefly, to analyze a little the factors concerned. But first we must enter a disclaimer against this concept of joy as a "fragile" thing in our lives, something too subtle to be safely handled. Quite on the contrary, the satisfactions of work stand the severe common handling of a world of rough and common folk, and removed for a time by toil, excessive or ill-fitted work, or by a period of indolence outlasting the need of rest, it recurs and leads back the man or

¹ R. C. Cabot, "What Men Live By", Boston and New York, 1914. Readable essays on Work, Play, Love, and Worship by a wise physician to whom people *have* to listen, so human is the man.

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woman of average sense to the work in which there is satisfaction merging into joy which does not fail. This fact remains, despite the all too obvious certainty that much of the world's work still is toil or drudgery. It shouts loudly and incessantly to the "lords and masters of the world" to use their science and their mastership to *adapt* the work or, when below the adaptable grade, to perform it as soon as may be with machinery. It were a shame to designate as work, which is the normal expenditure of personal energy, that drudgery or toil which Millet has drawn and Markham made horrific :

"Down all the stretch of Hell to its last gulf
There is no shape more terrible than this —
More tongued with censure of the world's blind
greed —
More filled with signs and portents for the soul —
More fraught with menace to the universe."

Yet no one is blamable, "censure" is due to none, and the signs and portents and

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menace will gradually lose themselves in the ever-progressive melioration of an evolving world. Let us join once more with President Bartlett's far- and long-famed Dartmouth "slogan", "O, hasten the day!" But let us remember meanwhile the surprising paradox between our meager life-span (although all we have) and the time which the development of a planet inevitably takes. Then we will not be impatient, or get excited, or forget the basal optimism which underlies the normal activity of every mortal born. "Nature will not have us fret and fume. . . . When we come out of the caucus, or the bank, or the Abolition convention, or the Temperance meeting, or the Transcendental club, into the fields and woods, she says to us, 'So hot? my little sir.'" And this heat is the wholly unwarranted egotism of a soul outsoaring its mortality.

For our purpose then, and properly everywhere, work and play mean the

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systematic expenditure of a not excessive amount of the energy of mind and body (empirical in several forms, but probably aspects of one Essence which perhaps does not appear) in ways suited more or less closely to the individual. Monographs of description of this expenditure and of this energy might almost be condensed into the little proposition: The energetic living of life in its human fullness, vegetative as well as voluntary. This living gives joy above every other persistent procedure.

Some for therapeutic purposes and others for dogmatic reasons have urged that this living must be as objective as possible with a minimum of self-consciousness. While emphasizing the entire necessity of this in therapeutic practice, where hysterical egotism or neurasthenic hypochondria are almost universal, still there should be a limit. One is happier, in greater enjoyment, when he realizes that he is so, and

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this fact is of no small practical importance. Its explanation is psychologically as simple as it is sound: the fundamental principle of contrast; the same water feels distinctly warm or plainly cold to the same hand according to the latter's immediately preceding temperature-experience. This physiologic influence, probably basal in the brain's action, is reënforced by the powerful suggestion of enjoyment.

It is this same means, suggestion, plus the additional or multiplied activity obtained, that makes continual association with young folk or even with children the important instrument of rejuvenation to people at middle life or beyond that which it obviously is. Here again the strange false "dignity" and false pride (which in reality is but vanity) of many grown people have come in to injure the reputation of a wholly estimable practice. Who would be bold enough to say, however, that the occupations of the child, his

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busy-ness or his play, are in general of less account than the occupations of an adult? And assuredly no means is at hand for more certainly "keeping young" than by systematic participation in the joyousness and in the physical activities of the youthful. To do this one by no means needs to make a fool of himself (in sooth is "no fool like an old fool") by pretending powers that are no longer present; but rather is it the mental attitude of sympathy and suggestion which counts most. "All things in proportion" certainly, but long and happy life demands inevitably, both mentally and physically, the juvenescence of general joyous activity.

CHAPTER VII

Worry and the Glory of the World

IN the slang sentiment of the day, — Some one's always taking the joy out of life! At times it may be the egotistic and thoughtless neighbor, but the world around and every day that "some one" is no less a personification than Worry the Fiend. He is the typical "antijoy"; from every point of view, this kill-joy, the Satan of our day as of no other, stands for both, the logical opposite and the practical, persistent enemy and destroyer of happiness. If we would define in our minds the contrary of joy, it is expedient so to consider worry.

From a recent booklet ¹ it may not be

¹ G. V. N. Dearborn, "Nerve-Waste", Health-Education League Booklet No. 27, Boston, 2d ed., 1914. This Series, written mostly by medical specialists, has much popular appeal for the preservation of health.

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amiss to repeat the present writer's general views about this important actual factor of our lives :

Pre-eminently notorious among the common modes of nerve extravagance and waste is *worry*. This is the sheerest wastefulness in all our lives — expenditure with nothing and worse than nothing in return. Worry is the very stock-gambling of extravagance in vital forces without possibility of a “bull market” or a “bear market” to recoup in, — dice-throwing with the dice loaded always against you. In the terms of our discussion, every hour spent in worrying about some evil, whether real or imaginary, is a large and wholly needless check drawn on your bank balance of bodily and mental strength. If one borrow trouble, the rate of interest that one has to pay is rank usury.

We may define worry as *the habit of wasting the soul and the body on evils that have not come*. Many of its victims might

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properly define it in the same terms that General Sherman used in regard to war, — brief, but at once philosophic and expressive. James Russell Lowell never wrote anything more true than his statement that “the misfortunes hardest to bear are those that never come,” for the human imagination running riot is very apt to make things seem *worse* than kindly Nature often allows them actually to be.

Worry is described by the physiologists as essentially a form of more or less chronic fear, — fear that something evil is going to happen. Fear, of course, does not well become the strong man or woman; although, as every one who is grown up knows too well, some worries cannot be avoided in this troubled life (fear of the illness and death of friends, for example). These must be met as is fitting to the brave.

Since the valuable physiologic work of Austin and Sloan on the nerve cells of

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rabbits, we know the actual effects which fear produces in the nervous systems of animals, and we know that the effect is very serious and widespread in the body. Worry must produce this same effect, and often to a greater degree even than a period of terror, which of necessity can last but a short time, so exhausting is it to the brain.

Such facts (and they are really facts) ought to be more preventive of extravagance in worry than any sort of mere logic would be. The ordinary anti-worry argument of course reads: If what you worry about can be prevented or cured, prevent or cure it rather than suffer so; if it cannot be cured or prevented, why waste energy and time suffering because of it? Excellent logic, certainly, but woefully incompetent, as most of us well know, to restore the wasting brain cells, or to abolish unaided this worst of bad habits.

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The reason why so few worriers adopt the frequently expressed advice not to worry is that worry has the emotional basis just now suggested, that it is a *feeling*, with a tremendous motive power behind and beneath it, hard to be controlled. We need not pause to describe in detail the physical and mental effects and conditions of fear and worry; suffice it to say that its depressing influence arises and is felt in well-nigh every portion of the body, — bowels, stomach, heart, blood vessels, lungs, brain, muscles and nerves, — and therefore unfits its victim for every free and useful act.

The motive power of much of our human activity is emotion or feeling, and those emotional states that depress the nerve centers tend to paralyze action, lessening at the same time our desire to do things, and our power of doing them well when we try.

Here it is that happiness comes into the

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matter. Multitudes of men and women learn sooner or later that not always, by any means, as we have often heard, is the race to the swift, or the battle to the strong; often, very often indeed, one inclines to think that both go to the *happy*, — lords of the world.

Saleeby puts it well, although perhaps too strongly, when he says: "There is no human end but happiness, high or low. Its one absolute negation is neither poverty nor ill health, nor material failure, nor yet starvation — 'he that is of a merry heart hath a continual feast.' The one absolute negation of happiness is worry or discontent. A prosperous society, consisting of strenuous worried business men, who have no time to play with their children, or listen to great music, or gaze upon the noble face of the sky, or commune with the soul . . . such a society may be as efficient as a beehive, as large as London, and as wealthy, but it stul-

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tifies its own ends, and it would be better not at all."

Not only work, but rest, likewise, is really efficient only when the soul is care-free; this freedom from worry, as Saleeby has so importantly pointed out, *is the very essence and the quintessence of every real holiday*. There is, too, a fine philosophy that makes of the hard-worked life a holiday, that refuses to be worried whatever come, trusting, with Tennyson, that "all is well."

But it is not only work and rest alone that are interfered with by the bad habit of worrying — it disturbs also some of the most fundamental conditions of good health. No mental circumstance so decidedly harms digestion and assimilation, or causes so commonly the nervous dyspeptic habit. This in itself means a large group of harmful influences, little short of actual disease. Here we have one of the 'vicious circles' the doctors

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talk about, — worry impairs digestion, which in turn leads to more worry through the injury to the delicate structures of the brain and nerves.

This general condition more than anything else is the cause frequently of the premature loss of beauty in women and of youthfulness in men, for both men and women age rapidly and become wrinkled betimes when unhappiness and the dyspepsia of hurry and worry are the demons of their passing days. Insomnia, also, accounts for some of this, and, as we have already pointed out, worry is one of insomnia's most frequent causes.

Worry is distinctly a matter of habit, and one which, like most bad habits, is far more easily acquired than abandoned. It is largely a matter of will-power whether it be allowed to take possession of the individual, body and soul, or not.

The causes of our worry are often more purely physical than we suppose.

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Mind and body are in the closest relation to each other, and, strangely enough, sometimes conditions which seem to us to be purely mental, and perhaps even beyond our control, so that we worry about them, turn out, like our other depressed moods, to be based on simple physiological derangements, temporary, and easily curable. A brisk walk in the open air, a visit to a vigorous and jovial friend, even a cathartic, frequently sweeps the worrisome cobwebs out of a troubled mind.

We cannot afford to forget this thoroughgoing interdependence of our bodies and our minds, for it will often lead us into simple but substantial habits of good hygiene, wholly incompatible with the persistence of many of the trivial worries in our souls. If genius be, as has been said, in part "an infinite capacity for taking pains", let us all be geniuses (and so happier than most) in taking care that needless petty worries do not spoil any of

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our rapidly passing days or hours ! No one can afford this habit, for it costs too much of our life.

We are now assured by competent medical opinion that it is by no means unlikely that goiter may originate in excessive emotion, and especially from fear. H. Cushing seems to believe this and the recent work on the interrelations of the ductless glands and on their influence in dynamogeny makes it likely, for it is "a poor rule," even in lawless physiology, "that will not work both ways."

Not less expedient and certainly no less effective than the consolations and wisdom of religion in the abolition from our lives of this the chief great kill-joy, is the Transcendentalism of a previous American generation. It points out the glory of "the majestic world" and the transcendent essence which pervades our lives, and says to us, in substance: How absurd, then, to worry ! The deep responsibility of things that are not as we would have

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them are not on our puny shoulders; we have enough to do to live life well, whether it be in a palace or in a hovel. *Life* confronts us, the richest of all the categories! Up and at him, and joy will take the place of fear!

We have recently had from H. G. Wells¹ a striking and, I believe, new characterization of fear as “a social instinct, worst at the first onset, and far worse than any real experience.” It disappears when one is not “alone”; it is worse at first than afterwards; and it is far worse than any real experience: each of these conditions is of large practical value in the displacement and replacement of the worst form of fear — worry — by happiness.

One often hears it said that there is more religion in a smile to the living than in an eloquent eulogy to the dead; and

¹ H. G. Wells, “The Research Magnificent”, New York, 1915. The story exemplifies the difference between joy and satisfaction, with everybody content — the hero with his stoical satisfactions, the others with their pleasures.

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all can smile, but few can eulogize. The supposed "Cherry" in John Trevena's recent "Moyle Church-Town" says to the 'Squire: "Sir, there never was a man or woman born who could not learn the simple task of knowing happiness. 'Tis true there may be many unwilling to learn, and many more who have not found a teacher. Sir, if one man in a crowd bursts into laughter, all the sour faces will laugh to see his mirth; he who laughs is the master. But if he should bid the sour faces to laugh, they would tell him to mind his business. God created happiness as an act of worship to Himself; but when the Devil also attempted to create, it turned into sorrow. Sir, melancholy is the worship of the devil, and I'll have none of it."

Worry and indolence and (abnormal) fatigue may lead one for a time to sympathize with Christina Rossetti in the sestet of one of her most beautiful sonnets:

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“ And evermore men shall go fearfully,
 Bending beneath their weight of heaviness ;
And ancient men shall lie down wearily,
 And strong men shall rise up in weariness ;
Yea, even the young shall answer sighingly,
 Saying one to another : How vain it is ! ”

This certainly is a little masterpiece of affective beauty expressing an oft-recurring climax of melancholy emotion, but it lacks, as do most pessimistic attitudes, that fine agreement with the best life philosophy, both practically and theoretically true, expressed by Duncan Campbell Scott, for example, in a stanza that seems to sing itself out of the supreme wisdom of the world :

“ Let your soul grow a thing apart,
 Untroubled by the restless day,
 Sublimed by some unconscious art,
 Controlled by some divine delay.
For life is greater than we think
 Who fret along its shallow bars.”

It is not a little surprising, even to a psychologist, to whom many delicate

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causes producing tremendous effects are familiar, how subtle this worrisome state of mind may be. It would be hard for one to state with a feeling of certainty why a sense and behavior of hurry, for example, should so closely resemble worry in its baneful influence on the physiologic functions. Almost every one, however, in this "americanitis"-infected Land of ours must have actually observed this ill effect at one time or other probably by an acute indigestion within his very stomach! Reduced to its scientific value, obviously this hurry is in reality its rhyme-mate worry, a half-realized fear, in short, lest one be late for the something or other for which he is hurrying. One learns an important physiologic principle from this common injurious experience, namely: *Life properly is a deliberate and dignified process to which hurry, that is, undue haste, is wholly a stranger.*

Let us learn this lesson well, for all Nature sets us our example and serves us

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our sanction for taking time to live, thus in general living well. That silly remark, so often sententiously propounded, that it is better to wear out than to rust out, is quite beside the mark, for the instrument that does the best work is neither rattly from over-wear nor rusty from ill care, but full of keen life and active usefulness, running at its normal speed, eager to accomplish that which it is intended to perform and neither less nor more. It is only when we worship false gods and "pursue" happiness too mistakenly that "even the young shall answer sighingly, Saying one to another: How vain it is!" No one thing better represents this vanity than real haste or hurry, an opposite inevitably of joy. And joy maketh no waste. The surest sign of the real wisdom of any age-period is an effective realization that character and well-living, like the Earth itself, were "not made in a minute." The truly wise youth takes full time to live.

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A conspicuous aspect of this whole casuistic subject in the science and art of living well is the still neglected matter of *relaxation*—the problem of literal bodily relaxation and that of the mental form being psychologically probably one. But a volume of physiology alone could adequately set this essential matter forth—as perhaps one sometime may. It is enough here to formally call attention to the preëminent importance of frequent relaxation, thus relieving the fatiguing strain on heart and brain and soul! The avidities of civilization have far outrun the powers of resistance in man's already over-developed nerves. Nothing in the human hygiene of the near future can excel this matter in significance, for underlying is not only a whole physiology and a whole psychology, but a whole *philosophy* of Life. Professor Patrick's recent contribution¹ to this literature is as novel as it is wise.

¹G. T. W. Patrick, "The Psychology of Relaxation," Boston and New York, 1916.

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But other factors than worry and its own dismal sister — hurry — partake of the family nature of the antijoys. Conspicuous among these are envy, hate, and jealousy, enemies all and sundry of mankind. The first of these and the last are near kin. Hate means usually a narrow mind quite unable to put itself in the viewpoint of the hated one. It is clear that in all of these the depressive and weakening attitude is closely allied to fear and means physiologically much the same thing — the exhausting of the immediate food material of the brain by a continuousness or by an intensity of action, or by both, which they never were intended ever to undergo.

The notices we read on either end of some railroad crossings have more wisdom in them too than the mere information how to avoid being mangled by the locomotive: "Stop, look, and listen!" *Stop* your rush and worry, urged on by that

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reckless (but not wreckless) chauffeur, Thoughtlessness. *Look* at Nature all about you, never for long unhappy; look into the blue dome by day and out over the starlit sea by night; and look up and down the track of your life for the unhappiness that might crush you. *Listen* to the music of the world and of the other spheres and, in the silence of your sleepless nights, to the rumble of a System which it is yours neither to stop nor to control save as you drive or refuse to drive across its track of unhappiness.

Worry is quite incompatible with the glory of the world; but joy is the living index thereof. Well indeed might we in part go back to the better freedom of the ancient world which was not afraid to play, as Fracastorius suggests:

“In the meantime expel them from thy mind,
Pale fears, sad cares, and griefs which do it grind,
Revengeful anger, pain, and discontent,
Let all thy soul be set on merriment.”

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Multitudes of men and women, old and young, are in this woeful condition of emotional and mental slump, so to say, *without realizing it!* A child born and brought up in squalor and indigence and neglect may not realize these all-pervading qualities of his life for many years, perhaps not until adolescence puts new ambitions into his or her conscious soul. A person may become infected with a mild and slow strain of "la grippe" (most suitable name!) and in the course of a week become miserable while scarcely realizing it and then stay so for a month, appreciating his woe-fulness only some bright morning when it has gone; then indeed he realizes how unhappy and perhaps how "unfit" he has been for weeks. It is thus sometimes with the offensive unpleasantness of the anti-joy whose avoidance or escape this little book tries its best to urge. Herein lies one of the book's sanctions, in fact,—in its possible use to many as a reminder that

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they are not as happy as they well might be. Examine, then, O prudent and canny reader, thy nerves, thy mind, thy soul itself, if indeed its brilliancy be perchance unwarrantably dimmed and, for the time, unworthy of its high privilege!

CHAPTER VIII

The Economics of Happiness

THE scientific economics of joy and happiness remains to be developed, and our thesis insists that it is developable. In other terms, joy has a valuation (even if not yet in figures) in State Street on the bulletins of the Stock Exchange; in the concrete-and-glass factory office of Mr. Shoemaker; among the maids in your home; in the coal mine; aboard ship; in your own private accounts which you keep to satisfy the income-tax collector. Daily joy has money value as well as soul value even in the manual trades. And soon some man (or, more likely, perhaps, some ingenious woman economist) will begin to reduce it to grades, to "standardize" it, and to find its mean

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financial value to all sorts and conditions of workers.

There is an inherent relationship as deep as is conceivable in our human personality between the experience of a satisfaction which merges into plain enjoyment and the activity, fusing into the capability, of the body. This relationship is "immanent", as the metaphysicians used to say, in our self-reliance, in our pride of life, extending through the gamut from mere baseless vanity upward to the substantial manhood or womanhood which is certain of its worth and of its powers. The keen and great thinker Spinoza, nearly three centuries ago put this primal relationship into plain Latin in three successive propositions of his "Ethics" (Part III, Propositions LIII, LIV, and LV), translated by Elwes:

"When the mind regards itself and its own power of activity, it feels pleasure: and that pleasure is greater in proportion

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to the distinctness wherewith it conceives itself and its own power of activity. The mind endeavours to conceive only such things as assert its power of activity. When the mind contemplates its own weakness, it feels pain thereat."

This emphasizes one side: that we take delight in our capability and vice versa; the other side, that our powers increase with the agreeableness of the process, it has taken a busy scientific century to demonstrate. Let us turn now to its more practical meaning.

If one compares the larger workshops of to-day with those of a few decades ago, one sees at a glance how much has been done in like direction, but with week-day good health and productive hygiene as the guiding star rather than happiness. It need not be suggested that the two are close relatives, daughters both of the same sound and handsome couple, the Busy Normalities. But happiness may be furthered for

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her own sake, being quite worth while herself as well as a complement to her hygienic sister.

A glance backward over the first chapter of our essay suggests fully enough perhaps why work-a-day joy has economic status: it is, in short, because *happiness is strongly dynamogenic*, increasing the expenditure of energy in every kind of work. Joyous behavior is more vivacious; and a happy girl in a paper-box factory will probably make at least five per cent. more boxes in a day than the same girl unhappy can pile up. Moreover, the work done under the stimulus of joy is not only faster but better in every way, for it means an attentive interest in the adjustments, making them more exact.

However considerable the efficiency increase in manual vocations, in those that are commonly termed mental (as if all such were not also neuromuscular as well!) the productive advantage is far

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greater still. Here speed becomes usually of minor account, the quality being of importance out of proportion to the time required. And happiness urges its own perfection on what it helps create. The practical result of this two-phased principle of creative efficiency, and somewhat in ratio with the psychic freedom of the work, is that forms of art and philosophy and notably creative literature ordinarily are actually dependent more or less on it. The author, at a recent "Shop-talk" of the Boston Authors' Club, made a little more explicit some of this dependence under the title "The Author's Stheneuphoric Index." In part he said:

In its details this close association between happiness, or contentment akin thereto, and the highest creative efficiency is a long and much involved story with complex plot within plot and incidents innumerable, whose scenario its Infinite Author is provokingly slow and hesitant

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to reveal (on this particular speck of the cosmos at least). My present years are in part employed in an attempt to understand this story whose practical meaning, however we view it, is so impressive. It is just one little phase of the master-knot of human mystery — the relations of the body and the mind, which in its last analysis reduces to the structure and the mode of action of the human nervous system, by all means the *magnus opus* of Evolution up to our era. The gist of the matter, the grist of this milling, appears to be that fatigue and pain and worry and impatience and real unpleasantness of every kind related to authorship and other creative work are abnormalities which actually diminish the speed and mar the quality of our entire creative efficiency. It is somewhat as if the course and the rate of a trolley car in our present wretched system were actually impaired by the wheels' squeak and the smell of the bad

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air and the personal repulsion and the jolt and the whole general impiety of the interior atmosphere. And sometimes in very sooth these are so impaired — as from quarrels with the conductor or by withdrawals because of the bad conditions within. Fatigue and unpleasantness of every sort may find their sanctions in the world's last reckoning, for philosophy as well as for religion and theology. But so far as the definite practical economics of a workaday world is concerned, there is little doubt that for the most part organic happiness makes for greatly increased productiveness in quality and in quantity both.

Be not misled by probable personal memories of "forcing yourself to do excellent work when it was most unpleasant", etc., etc. Two ideas seem especially to belie this fallacy: (1) already suggested, the inexcusable waste of nerve strength necessary to force the association of ideas

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along the paths which for efficiency should always be, so to say, downhill; (2) even more frequent, perhaps, a confusion of terms, the mistaking and misinterpretation of feelings due to ennui, atony, lassitude, for a real dysphoria or emotional unpleasantness underlying the action of the nervous system, in short, worry and true fatigue.

In general, then, these last, the contrary, in short, of our more or less symbolic "joy", seem to be of practical economic importance in freely creative work. To demonstrate this proposition, however, to set forth scientifically the details of this, the very heart of our matter, would take us into technicalities of physiology and psychology wholly out of place here. And you'll all be jolly well content, as our English cousins say, to avoid the stress and strain, and so merely be assured that such wholly undomesticated and unauthorized creatures as the cortical nerve-cell cyto-

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plasm, internal secretions, blood pressure, and numerous like things underlie what we are slowly learning about this general relationship of unhappiness and unpleasantness to creative inefficiency or incapacity, objectively considered. On the other hand, your own interests it may be, as well as scientific theory, compel me to assure you that the practical fact seems to be substantially as I have said: It is better for your true 'efficiency' that you should not do creative work at all at any given time than that you should do it when it is distinctly an unpleasant task, that is, whenever the high quality be the aim. This is true of all highly-skilled work, as Professor W. F. Book has shown. Where quality and progressive efficiency count, it is pre-eminently true of (new) creative work. But nowhere else certainly than in literary work are materials and methods and results so wholly free, and therefore so wholly subject to the law.

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Mind and body are one, and language is an integral portion of the human mind, and of the human body which expresses and conditions it.

It is not only a matter, however, of actual capability, but also of wasteless capability. If we would reach our highest and greatest efficiency, do the best for ourselves in the long run and struggle, we must here as elsewhere consider 'safety first.' [To push too hard against fatigue, continued disinclination, or positive unpleasantness, is to be wasteful of the best we have or can have as creators.] And there's never any excuse for waste, anywhere, under any conditions, but, least of all, of a waste of our nerve force, of our vital energy, which goes apace but does not readily return.

The painter and sculptors and the musicians long have realized and practised this principle as a necessary condition of their best creative work. Let the

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painters teach you, then, their easily-learned lesson! those of you who have not already found this broad but (for once) straight road for yourselves.

When the different phases of creative work shall have been studied along this general method, but with actual experimental data and mathematical results, then at length the economics of happiness will have been, in part, written. Herbert Spencer, Alexander Bain, Grant Allen, H. R. Marshall, Max Meyer, and numerous others already have taken this matter a little way along its physiologic road, far beyond Jeremy Bentham and the Utilitarianism of Mill. But in spite of these, which are as it were the steam engines and the electric motors of transportation, the true ultimate internal-combustion engine which will carry us along in contentment to the goal of hedonistic economics, although invented, is yet to be employed. Along this splendid roadway one speeds at

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will, and the ride, although a ride of joy, results for a certainty in no disaster.

Personally, I have long firmly believed that the ideational side of mind and of human efficiency in general, the so-called pure "intelligence" (as if feeling also were not intelligent!) has been far over-rated in the world's estimation, in its philosophic esteem especially, but to a less extent in the popular valuation, although the latter be in large part derived from the former. Because of this disparity with the scientific facts, knowledge as distinct from *sentiment* has been greatly over-appraised. So keen a philosopher of practical affairs as Huxley does not fail to express in his surpassing definition of a liberal education this over-estimation of the logical efficiency of men (for the nonce leaving women out of the consideration) when he says that it involves an intellect which "is a clear, cold, logical engine, with all its parts of equal strength and in smooth working order,

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ready, like a steam engine, to be turned to any kind of work, and spin the gossamers, as well as forge the anchors, of the mind." Such a "logical engine", did it exist, were certainly not worth nearly as much to "the man on the street", that is to the traditional "average" man, as a well-developed appreciation of his own and the world's deeper values, those of the proper human relationships.

Morton Prince in his latest essay¹ has a paragraph which values these things more equitably :

"Our conscious thoughts are much more determined by subconscious processes, of which we are unaware, than we realize. One great popular delusion is that our minds are more exact logical instruments than they really are, and we stand in awe of the minds of great men, thinking that

¹ Morton Prince, "The Psychology of the Kaiser", London, 1915. This little application of recent psychology has more meaning in its few thousand words than many billions of dollars and some millions of men have so far been able to express.

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because they are superior in certain directions they are therefore superior in all other directions of their activities, where they claim superiority. Whereas, as a matter of fact, a man may be eminently superior in certain fields of mental activity and psychologically a perfect fool-thinker and fool-performer in other fields. Helmholtz said of the eye that it was such an imperfect optical instrument that if an instrument-maker should send him an optical instrument so badly made, he would refuse to accept it, and return it forthwith. He might have said the same thing of the human mind. It is a very imperfect instrument of thought. All we can say is that it is the best we can get. The deeper insight we get into the mechanism of the human mind, the poorer thing it appears as an instrument of precision."

The old wisdom of the race has expressed this another way (through Madame Cornuel) by saying that no man is a hero to

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his valet. In other words intimacy discovers mental defects which are hid from mere acquaintance by the claims of general superiority. This deficiency of all-roundness in most of us, and the consequent relative superiority of the inherited feeling-aspect of human nature, lends both moral and practical support to our primal proposition that we should allow or force ourselves to be influenced by the instinctive joy of life. Then would we realize that

“Non est vivere sed valere vita.”

CHAPTER IX

Personality

THE material which we have now presented would be scarcely worth even the planning had it not as its vitalizing germ and spirit something close to the always separate individual, an intimacy of meaning and mayhap of value for the striving, unique soul who appropriates it. However awful the present annihilation of the individual in a considerable part of the world may be, however vivid and flaming and altogether "unbelievable" the apparent apotheosis of centralized Right-in-Might, the Individual remains, in the long run world-wide, the final arbiter and object, as he is always the locus, of human life and human destiny. To abandon this attitude, to forget, deep in one's brain, how-

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ever sore one's heart, this Eternal Individualism, is to crush by a single lapse of human reason the whole meaning as well as all the sweetness of our common life.

And this general proposition of ours, this doctrine (in a purely secular sense) is not merely a theory, not merely a mass of psychobiologic science, but it has also, as has been hinted, practical applicability, *common use* for the common as well as for the uncommon man and woman. The educational problem is one of method in making it a continuous motive in the conduct of life.

The difficulty is largely one of futurity, so to say, and forbidding only because achievable so far ahead. It is the same problem that real education must meet in other respects, all parts of the indispensable *wisdom of life* or of living which the world is beginning at last to see is part in turn of the child's birthright itself. "Eugenics" and hygienic prophylaxis are two other

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obvious factors in this future wisdom as to how to live, the practical psychology at the basis of "success." Certainly happiness is always a prominent necessary member of this momentous family. At present the school curriculum does not even show the child that it is his birthright, let alone explain to him how it may be secured. Algebra and the elements of Greek philology are deemed more important to the future citizen and father and brother and husband than the deep wisdom inherent in the joy of living and in the means of happiness of fellow citizens, children, brothers and sisters, and wife. In other words, civilization is as yet far from being down to its bed-rock of human values. Sometimes it fails to see life because of its busy concern with some of life's excrescences (militarism is an example), and wholly misses the individuals because of the crowd.

The joy of life, then, is not, so far, in the public-school curriculum any more than

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is the nature of personality itself. But some of us here and there are wondering how long the psychologists and the moral philosophers are tacitly to pretend that what they know of Life-wisdom is beyond the understanding of the average school-child. This notion of course is absurd. In the hurry of educational discovery, it has been overlooked that advanced mathematics requires a special type of student-mind, but that ethics and psychology, on the other hand, do not. The writer is one psychologist who believes that if there is anything of practical value in psychology really not teachable by one who knows his business to an average girl or boy of ten years, that that part of the science is as yet not intelligible to itself; and essentially the same attitude is true in regard to ethics. Is it the history of the long war between Latin and the vernacular repeating itself in a Twentieth Century guise? Is knowledge, the very wisdom itself of how

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to live happily, too good for children? If it be only a matter of pretended abstruseness, certainly "knowledge" does not as yet know itself.

Whatever be the educational system's apology for this state of defect and want, personality and how to attain it, happiness and how to secure and radiate it, rest to-day with the family influence and instruction. They seem to me to rest properly there in such families as consciously realize that the active obligation exists. Our ancestors, when nomads and paleolithic cave-dwellers, did this at least for their children. We must welcome vigorously then that near-future combination of the Montessoriized outdoor playground and intensive home education that will properly prepare the girl and boy, ideally together, not only for rapid school-life at about ten years of age, but for Great Life at every age, *and* for the joy of living it.

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Among the important things that the education of a somewhat later day will surely teach to every child, and by which every present adult might amply profit now, is a deeply seated confidence in the destiny of man, at least "that all is well." Part of this in practice is *the abolition from the mind of all fear of death as something evil to be kept out of consciousness*. We know now that here as elsewhere often "familiarity breeds contempt",—not familiarity with death, observe, but with the fear of death, save in a disordered mind prone to obsession. Hell being a dead concept at last, the fear of death which came from it should be proscribed and banished too. And after all, death is Life's greatest adventure. Death properly is the climax of a lifetime of entertaining, venturesome, chivalrous, perhaps reckless, events; and from such a climax no worthy man or woman with red blood vitalizing the body and courage and good reason inspiring

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the soul need shrink. Sorrow for affection lost and gone perhaps, and heartburn for the end of all these our only associations, but never a word other than of complacency for the great adventure of all and the personal solution, at last, of God's great secret!

The truest personality, as we have tried to show, is an individual wholesomeness based on two mutually complementary processes, impulse and impulse's restraint. A personality without both of these opposed phases, in some mode or other, is unthinkable, for without both, intelligent activity, its essence, could not be carried out. Of this activity, joy is the most natural index whenever the conditions are biologically normal. It is partly because of grades and qualities illimitable of abnormality that the gladness of childhood does not continue into age oftener than it does.

Each of these basic phases of personality,

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actuation and inhibition, the one vegetative, the other characteristically human, has its own type of joyousness, its own satisfaction. Endless were the task of making these explicit, for it would have to include every shade of enjoyment from the baldest and crassest hedonism, seeking only pleasure, to the extremely complicated satisfactions of the purely ideal womanhood and manhood, meeting even the requirements of Huxley's well-famed definition of a liberal education. The important thing for us is that both of these personal phases do have substantial and lasting founts of joy within their activities, and that each is essential, yes, indispensable, to the well-rounded life. Thus by a law of selfsatisfaction-seeking, more certain and more lasting than the orbits of the stars, the human individual, no matter how far he may soar into the empyrean of the super-human, is kept a mortal with mortal interests and joys and

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sympathies. Without the inhibitory joys, the man or woman is etymologically a brute, but without the vegetative, something that is worse, because factitious and inherently selfish, a secular ascetic.

Bliss Carman, in a book ¹ of essays about which too little has been heard, states the matter keenly: "The direct pursuit of pleasure, or to demand happiness, may indeed be futile; but the instinctive pursuit of our activities is not futile, unless it be ill-advised; and from such pursuit, when it is wisely ordered, some essence of happiness is inevitably derived. Happiness comes to us not as a reward of merit, but as a proof of worth. It is not a recompense for abnegation, but a natural satisfaction in normal life, an incalculable result of real deserving."

The ideal satisfaction or joy in the life-process would seem to be the incense glow ascending from a really human altruism

¹ Bliss Carman, "The Making of Personality", Boston, 1908.

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based on a natural egoism, both of these being ample, vigorous, and free.

We may cordially agree with sundry theorists that gladness as an effective agent in our behavior is eminently easy of cultivation. Were it not so, this book were of no use beyond its narrow and problematic scientific interest. As a matter of fortunate fact, the Master Law of Habituation rules in this as in all besides. Gladness of effective permanence and degree is not a mere theory of the optimistic morning sunshine, but a thoroughly practical and practicable human attitude. The *persistent will to be glad* is at first a joy, to be sure, but soon Nature makes of it a wholesome religion, almost a worship of humanity and thus a form of love to God; and

“Love that hath no beginning hath no end.”

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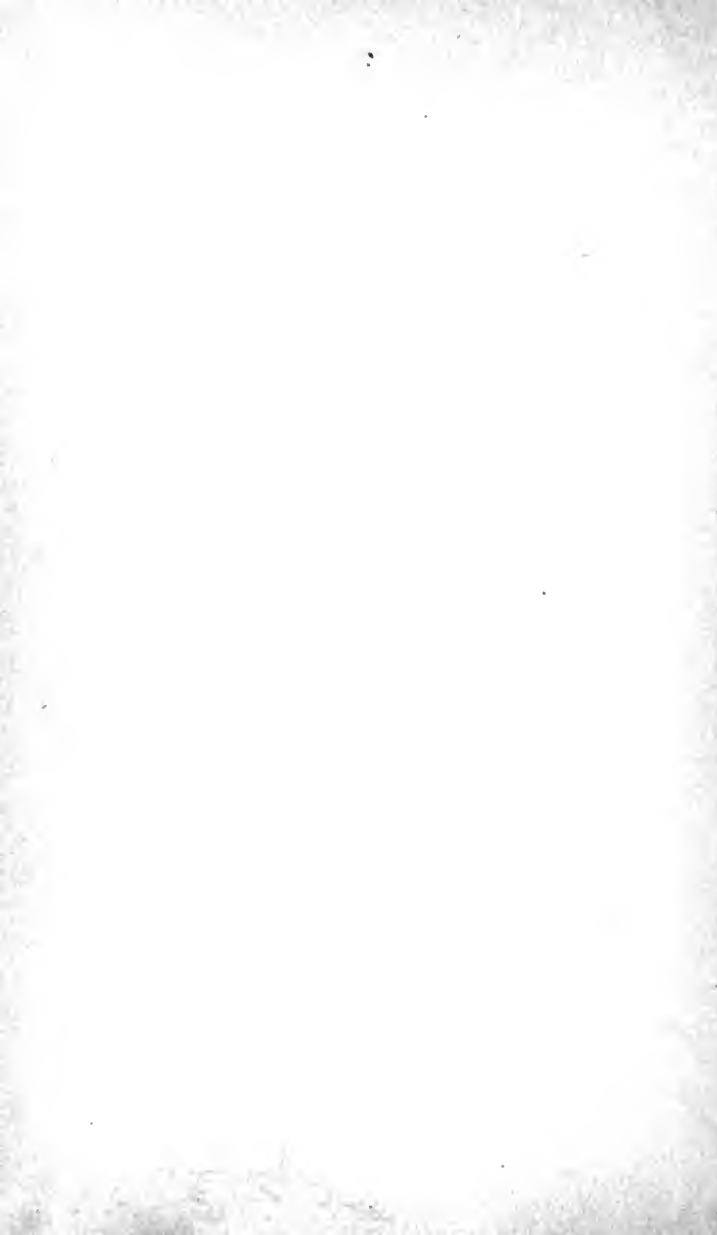
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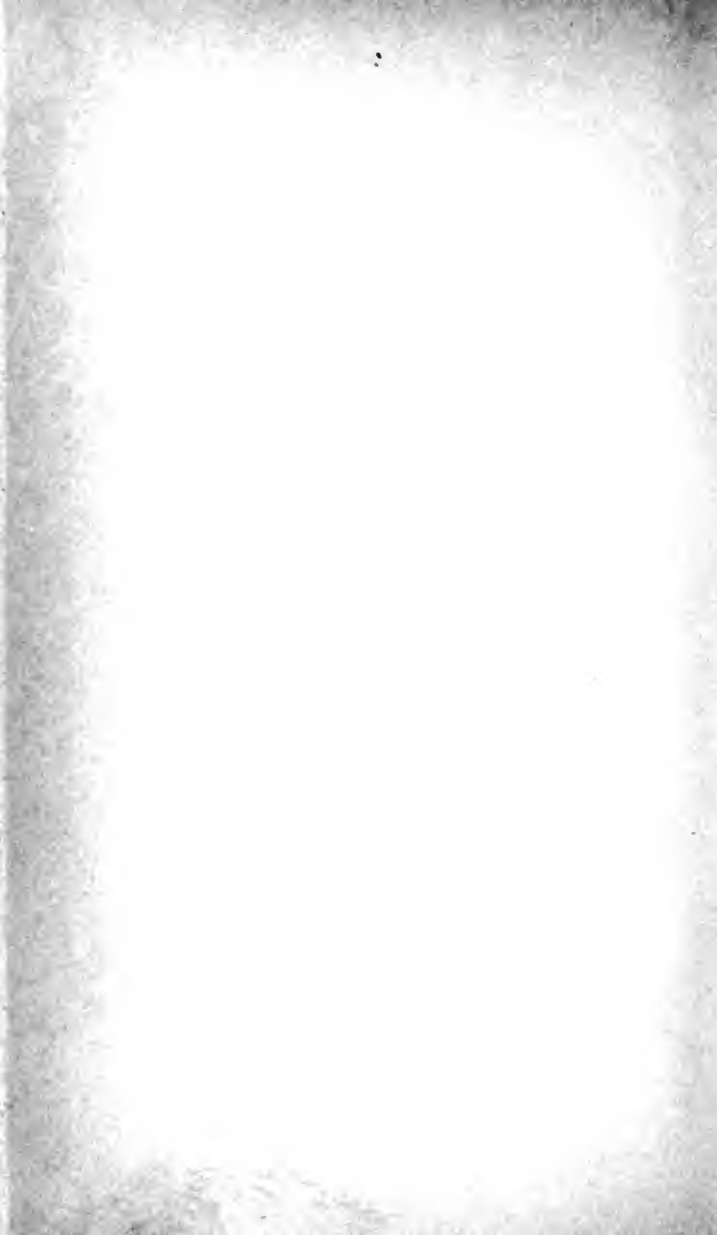
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